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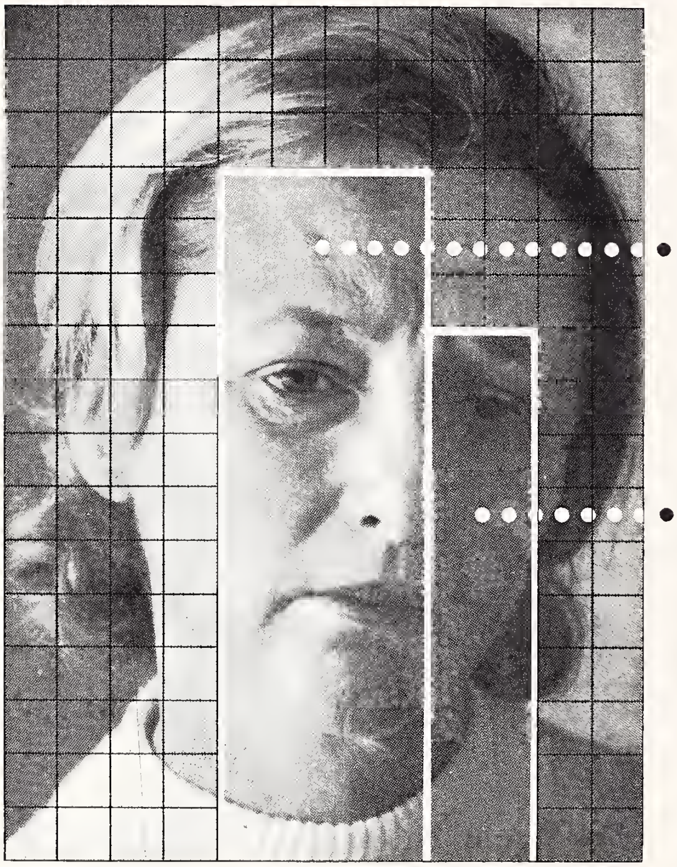
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Gynecologic Cancer Detection and Management

Valentina C. Donahue, M.D., Anthony J. Di Sciullo, M.D. and Robert C. Knapp, M.D.

Abstract—Gynecologic malignancies are amenable to early detection with survival correlated directly with extent of disease at diagnosis. The roles of cytology, colposcopy and selective biopsy are delineated for cancers arising in the female genital tract.

Early detection and early diagnosis, the twin goals of modern medicine, overlap, though they are really discrete processes. Detection is the screen by which a high risk population is identified and isolated; early diagnosis defines the location and extent of disease before symptoms prompting medical attention arise, or in the case of cancer, before obvious metastases have occurred. It is almost axiomatic that the early discovery of malignancy provides the greatest opportunity for cure. In gynecologic cancer, survival rates correlate directly with the extent of disease, e.g., the five-year survival rate for patients with Stage 0 or preinvasive cervical carcinoma approximates 100%, while the survival for those with far-advanced Stage IV lesions is only 8%. The same diminution in survival with advancing stage of disease is found in cancers of the uterine corpus, tube, ovary, vagina, and vulva.

Because of biological variation, cancers of the same organ or even of the same cell type may vary considerably in their behavior in individual instances; thus, the size of the lesion alone is not a sufficient measure to separate early malignancy from late malignancy. Small, easily excised cancers usually tend to represent neoplasms of low virulence. However, cancers with high innate virulence may already have metastasized while the primary lesion is still minute. This situation is illustrated by a recently reported series of 25 patients with apparent Stage I ovarian carcinoma, who were subjected to periaortic nodal biopsy: 25% of them had tumor present in these distant nodes, even though the cancer was grossly limited strictly to one or both ovaries. The common denominator in these 5 patients was histologic anaplasia, perhaps illustrating that they had a more virulent tumor type.[1]

This notwithstanding, the pragmatic assumption is generally made that the fewer the malignant cells present, that is, the smaller the lesion and the more it is confined, the better the outlook for the patient's survival. This view has proved applicable and appropriate in radiation therapy and chemotherapy. Moreover, results of experimental immunotherapy in a murine ovarian carcinoma support this view: 90% of animals inoculated intraperitoneally with 10,000 ovarian cancer cells survived following immunotherapy, whereas, only 20% of animals receiving 1 million tumor cells survived with the same treatment.[2] Translated into practical terms, these considerations encourage the pursuit of programs aimed at uncovering cancers before they become clinically manifest.

History

Cancer detection and diagnosis begins with a comprehensive history. History taking is best organized along the "problem-oriented" method, exploring particularly menstrual pattern, birth control practices, and obstetrical history, as well as presenting complaints of abnormal genital bleeding or discharge, pelvic pain, and dyspareunia. Investigating family history for malignancy is especially pertinent in breast, ovarian, and endometrial neoplasm, where hereditary predisposition may be important. Since the recent discovery of a co-association between vaginal cancer in young women and intrauterine exposure to diethylstilbestrol as a consequence of maternal ingestion during pregnancy, queries should be directed toward the usage of drugs during pregnancy.

Cervical Carcinoma

Cervical carcinoma was a leading cause of death from malignant disease in American women three decades ago. The halving of the death rate from this cancer has been attributed to the widespread use of cervical cytology and improved modes of surgical and radiation therapy. Epidemiologic studies in cervical cancer have defined groups at risk for this disease, pointing out that there is an inverse social class gradient; a higher incidence in married than in single women, and a higher incidence in women beginning sexual intercourse at an early age.[3] Circumstantial evidence from many sources supports the value of early diagnosis and rapid institution of appropriate therapy for cervical cancer.

Detection

Despite the almost universally accepted value of cytology in this malignancy, it must be emphasized

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that cytology is only a tool. Its worth depends on the size and location of the neoplasm, as well as on the technical details of obtaining, preserving, and interpreting the material collected, and how the information derived was used as a basis for action. The incidence of false-negative cytologic reports varies from 1.8 to 20%. Because of this fact, case-finding can never be entirely complete for purposes of detecting all intraepithelial carcinomas, and therefore, the incidence of invasive carcinoma of the cervix will probably never actually reach zero. The accuracy of cervical cytology is very dependent on the sampling method used. The technique that provides smears which are 97% accurate in the detection of cervical cancer is as follows: the cell sample is aspirated from the endocervical canal with a glass pipette and placed on one half of a clean glass slide. The endocervical sample may also be obtained by using a cotton-tipped applicator, first moistened with saline so that the cells will not adhere to the cotton, then twirled in the endocervical canal. The squamo-columnar junction on the exocervix is then gently scraped with a bifid-tipped wooden spatula and the cells thus obtained placed on the remainder of the slide. The slide prepared in this way must be placed immediately in the mixture of ether and 95% alcohol or coated with a fixative spray. Delay in fixation may invalidate the smear for purposes of cell recognition.

Not only must an adequate sampling of cells be presented in the laboratory, but careful attention must be paid to quality control within the cytology laboratory. "Over-reading" of cervical smears (that is, extensive reporting of suspicious or positive smears based on an overly liberal interpretation of cell morphology) will result in patients being subjected to unnecessary cervical cone biopsies. Many such conization samples will show no evidence of dysplasia or neoplasia. "Directed" exocervical biopsies and endocervical curettage to be described later in this article can obviate some of this problem.

Cervical cytology is probably the most practical, inexpensive, and reliable method of cancer detection. It must, however, be employed with full appreciation of its inherent limitations. When abnormal cervical cells are reported, the patient should undergo another cytologic examination at least two weeks after the initial test. If a cervical smear is repeated too soon, an adequate sampling of new cells may not have exfoliated from the lesion and a falsely benign report will result. A biopsy should be obtained of any obvious lesion on the cervix including within it apparently normal tissue.

The site of preinvasive carcinoma of the cervix was investigated by Foote and Stewart.[4] They concluded that nontargeted biopsies from 12, 3, 6, and 9 o'clock positions about the cervical os uncovered 25 of the 27 cases in their series. Further studies, however, have not confirmed this optimistic finding. Stafl and Freiderich surveyed the false-negative rate inherent in various cervical biopsy techniques.[5] They reported that the classic four-quadrant "blind biopsy" had a 12-33% error rate. However, if multiple sites about the cervical os were biopsied and many microscopic sections at different levels within the biopsy were sampled, the false-negative rate fell to 6-8%. It appears then that diagnostic accuracy of cervical biopsies correlates with the amount of tissue obtained and the thoroughness of the histologic examination of the tissue. By contrast, when study is made of tissue from endocervical curettage and biopsies "directed" to areas considered abnormal because of failure of the epithelium to retain the mahogany color imparted by Lugol's solution (Schiller test), the error rate is an acceptable 3%. It must be emphasized that the Schiller test (using an iodine solution, which, incidentally, must be freshly prepared) is not definitive for cancer. Normal columnar endocervical cells, which are commonly on the portio of the cervix in the form of an "eversion" or erosion, do not stain with iodine. Moreover, a cancer located high in the endocervical canal may be well beyond direct visualization. Furthermore, areas of infection and benign hyperkeratosis may give false positive reactions with supravital stains of Schiller type.

Diagnosis

The colposcope, an instrument using sharply focussed light with binocular magnification, is becoming increasingly useful in office gynecology for detailed observation of cervical and vaginal surfaces. The colposcope is not a screening device, but rather a means for selecting sites for biopsy based on apparent epithelial and vascular abnormalities. In women with abnormal cervical smears, such "directed" biopsies can replace conization at least 90% of the time. The technique of colposcopy has the disadvantage of requiring training, and the instrument itself is expensive. The focus of interest in colposcopic examination is the "transformation zone" at which columnar and squamous epithelium meet. Here, epithelial dysplasias and pre-clinical cancer arise. Normal metaplastic transformation yields a new squamous epithelium, which at maturity seems impervious to cancerous change. However, there appear to be phases during metaplasia when genetic information within the cervical cells may be altered and cell populations acquire neoplastic potential. Whether the inducing or cocarcinogens are bacterial, viral, or sperm DNA, or involve other factors is still moot. However, such "tainted" epithelia have morphological characteristics recognized as the "atypical transformation zone," a precursor of squamous carcinoma of the cervix. After gentle application of acetic acid solution, colposcopic examination will reveal this abnormality in the form of increased whiteness of epithelium, irregularity of surface contour, and distortion of the caliber and configuration of the capillaries of the cervical stroma.

In patients who have a lesion discovered by colposcopy or by targeted biopsies coupled with cervical curettage, diagnostic conization of the cervix will be necessary only in certain specific instances. For example, if carcinoma in situ is found, conization is generally warranted to rule out coexistent invasive cancer, lest the therapy instituted on the basis of preliminary biopsies prove inadequate for the unrecognized invasive cervical malignancy. Where colposcopy has allowed one to visualize the entire lesion and biopsies are acknowledged to have been adequate, conization becomes unnecessary. On the other hand, if the lesion extends into the depths of the endocervical canal so that its upper border cannot be defined, then diagnostic conization is indicated, so that the entire extent of the lesion may be sampled for study. Diagnostic conization is also indicated if there is a persistent discrepancy between the pathologic findings within the targeted biopsies and the cytologic reports from a reliable laboratory.

It should be emphasized that no surgical procedure, from conization to radical extirpative surgery, is warranted on the basis of an abnormal cytologic smear only. Targeted biopsies as described are vital to proper diagnosis and to planning appropriate therapy. With targeted biopsies, the need for conization of the cervix may be reduced. Conization represents a more complete survey of cervical pathology, but the cost of this procedure in terms of morbidity and financial burden is high. The complication rate is significant, especially in pregnant patients.

Once the decision to perform cervical conization has been made, there are two further issues of paramount importance: (1) the technique of conization and (2) the thoroughness of examination to which the tissue is to be subjected. Conization of the cervix performed by hot cautery is mentioned only to be condemned. "Cold-knife" conization of the cervix is the only procedure which will not destroy or distort tissue morphology. It consists of the removal of a cone-shaped wedge of tissue from the substance of the cervix, including endocervical canal, squamocolumnar junction, and a portion of the exocervix. To be considered adequate for diagnosis, the specimen must include apparently uninvolved endocervical epithelium above the lesion and comparably uninvolved exocervical epithelium beyond any visible lesion on the portio of the cervix. The size of the cone must be outlined, ideally by colposcopy, or, failing that, by Schiller staining, always bearing in mind shortcomings of supravital staining methods. During the reproductive years, most lesions are found about the cervical os and adjacent portio of the cervix, so that the cone in younger women will usually require a broad base and a wide angle, not extending up the entire length of the endocervical canal. For older women, in whom the squamocolumnar junction has shifted to a more cephalad location within the endocervical canal, the cone should generally be long and narrow. Once the specimen has been removed, it should be preserved fresh in a saline-moistened towel, and not immediately immersed in formaldehyde. Marking the 12 o'clock position with a small suture is helpful to the pathologist for orientation. Executing an appropriately designed cervical conization only to have a cursory number of microscopic slides prepared is illogical. Therefore, close communication between clinician and pathologist is mandatory for optimal patient care. Once the cone is received in the pathology laboratory, it must be processed adequately. A sharp scalpel is used to open the intact specimen lengthwise, so that the tissue can be pinned flat and then placed in fixative solution. After fixation, the cone is subdivided into an average of 15 wedges. Each wedge is then separately imbedded in wax and multiple sections cut from each block. In all, 75-100 slides are therefore obtained from each cervical cone for examination.

Therapy

The gamut of changes reflecting disordered maturation of cervical cells from dysplasia to carcinoma in-situ has been termed "cervical intraepithelial neoplasia" to emphasize the very high likelihood of progression to malignancy if treatment does not intervene. Accurate diagnosis is most likely to be accomplished if the precise steps outlined previously are followed. Therapy must be individualized in cervical intraepithelial neoplasia, taking into account the nature of the lesion, the patient's age and parity, and her comprehension of the disease process. Mild degrees of cervical dysplasia may be treated with either electrocautery or cryocautery. Therapeutic conization of the cervix may be performed for severe dysplasia and for carcinoma in-situ. This approach is particularly applicable for the patient who wishes to continue childbearing. However, she must be aware of the necessity for cervical cytologic examination at frequent intervals. If further fertility is not important or the patient is unwilling or unable to accept close periodic surveillance, then hysterectomy should be performed. If the patient is pregnant at the time of diagnosis of preinvasive cervical neoplasia, the pregnancy may be permitted to continue to term.

A very early form of invasive carcinoma of the cervix has been described "microinvasive carcinoma." A 15% incidence of vascular involvement and 3% frequency of positive pelvic nodes makes radical hysterectomy the treatment of choice in these cases. Radical irradiation or radical surgery are the available modes of effective treatment for invasive carcinoma of the cervix. Cervical carcinoma extending to the pelvic wall or with distant metastases is inoperable and is therefore treated primarily with radiation therapy.

Endometrial Carcinoma

Endometrial carcinoma is the third most frequent malignancy in women, after mammary and cervical cancer. It is primarily a disease of postmenopausal women, although in some reported series, as many as 15-20% of patients are still menstruating. Irregular bleeding, therefore, cannot be assumed to be dysfunctional; endometrial carcinoma is a possibility and must be ruled out. The generally accepted belief that endometrial cancer is relatively innocuous has led to great optimism concerning this malignancy. The high frequency of successful results obscures the overall cure rate of only 64%. There is an increase in both crude and in age-adjusted annual incidence data for adenocarcinoma of the endometrium. This is due partly to the increased longevity of patients. Improved nutrition has allowed people to live longer and improved economics have provided medical protection and health services that were not previously available. Once the ratio of cervical and endometrial carcinoma was 10 to 1; it is now roughly equivalent. Endometrial carcinoma is a disease of the economic middle class, and is more prevalent in affluent areas. The patient predisposed to the disease is usually menopausal or postmenopausal and is nulliparous or of low parity. She may be obese, diabetic, or both. In focussing attention on the older woman, however, one should not overlook irregular menstrual bleeding patterns in younger women aged 18-25 years, who are obese and may have difficulty conceiving. About 5% of endometrial cancers occur before the age of 40, and in some nationality groups, including the U.S., United Kingdom, and Israel, an unexpectedly large number of cases occur between the ages of 30 and 39.

Detection

It must be emphasized that cervical cytologic smears are inadequate for detecting endometrial cancer. The high false-negative rate of 82% in smears obtained from 154 patients with known endometrial cancer does not permit the "Pap" smear to be considered an adequate screening test for endometrial cancer. Even so, after the endocervical and exocervical cytological smears have been obtained as previously described, it is still important to prepare a second slide with material obtained from the posterior vaginal fornix to collect those cells shed from the endometrial cavity which reach the vaginal pool. There is no simple, reliable, and inexpensive method of screening for endometrial carcinoma comparable to cervical cytology for squamous carcinoma of the uterine cervix. Newer techniques such as the Gravlee Jet Washer, as with conventional endometrial biopsy, are of value only if findings are positive. If endometrial biopsy or irrigation is negative, further investigation should be undertaken in high risk patients. It should be noted that the sample derived from Gravlee Jet Washer requires special handling by a pathologist who is experienced in this method in order for reasonably accurate results to be obtained.

A patient who presents with abnormal menstrual bleeding in the perimenopausal age group or one who presents with postmenopausal vaginal bleeding or spotting (that is, occurring six months after the cessation of regular periods) must be assumed to have malignancy. Cervical dilatation and fractional uterine curettage must be performed, knowing full well that even this method may miss focal adenocarcinoma, those small cancers obscured by submucosal fibroids or those located in cornual areas. Moreover, because the site and extent of endometrial cancer is important for management decisions, the curettage must be done fractionally, identifying each specimen obtained by its anatomical source.

Diagnosis

Since therapy is determined in part by the stage of the disease found at the time of the first examination, curettage must be performed with precision. The first step is to curette the endocervical canal using a small, sharp, narrow curette before one does any cervical dilatation. Dilatation will distort endocervical morphology and tissue architectures. This step is vital to document tumor involvement of the endocervix as spread of malignancy to this portion of the uterus will require combined surgical and radiation therapy for optimal results. The endometrial cavity is then sounded, and the endocervical canal gradually dilated. Following exploration with small polyp forceps, a thorough and systematic curettage is performed. The endocervical and endometrial curettings are then sent in separate containers to the pathology laboratory for analysis.

A recent technique that is proving more fruitful than previous random endometrial cavity sampling, but not as complete as traditional curettage, is the use of the Vabra aspirator. This is a disposable suction apparatus, which can be employed in the unanesthetized patient without analgesia. A thin rigid cannula can be gently inserted through all but the most stenotic endocervical canals, as the cervix is steadied with a tenaculum, after the direction and depth of the uterine cavity have been verified by sounding. As indicated with classic curettage, endocervical curetting should be performed first with a separate curette and submitted as a separate pathologic specimen.

Therapy

The treatment of endometrial cancer, analogous to the management of all other gynecologic malignancies, is predicated upon the knowledge of the clinical extent of the disease. The factors of uterine size, degree of tumor differentiation, and cervical involvement are relevant in planning therapy. Endometrial cancer confined to the corpus of the uterus is preferentially treated by total abdominal hysterectomy and bilateral salpingo-oophorectomy, preceded or (less preferably) followed by intracavitary radium to the uterus and vagina. Carcinoma that has extended to the endocervical canal is classically treated by external radiation to the whole pelvis plus intracavitary radium application, and then by abdominal hysterectomy and bilateral salpingo-oophorectomy. With spread of carcinoma to involve structures in the pelvis other than the tubes and ovaries, radiation is the basis of therapy, although surgery may be indicated in elected cases. Carcinoma of the endometrium which has metastasized to distant sites is usually treated with progestins or polychemotherapy. Some selected localized endometrial carcinomas which have spread solely to the bladder or rectum may be treated by exenteration, as is done under like circumstances for advanced local cervical cancer.

Ovarian Carcinoma

Although malignancies of the uterine cervix and corpus are more common, carcinoma of the ovary is now the leading cause of death among all gynecological tumors in American women. Despite increasing sophistication in the use of surgery irradiation, and chemotherapy, long term survival in patients with ovarian cancer has not improved in the past 30 years. This is unfortunately so because ovarian cancer is a disease of true "insidious onset," lacking clearcut symptoms until the disease is extensive. Indeed over 70% of ovarian malignancies are incurable at first presentation. Repeated studies have confirmed that patients often present with initial vague symptoms of bloating, cramping, nausea, and pelvic pressure. Unfortunately, these are symptoms of advanced disease. Irregular vaginal bleeding is a presenting symptom in only 25% of patients. This bleeding may be due to a hormonally active ovarian tumor (such as the granulosa cell tumor), to a concomitant cancer of the endometrium (either another primary or metastatic) or to ovarian stromal hyperplasia associated with masses of ovarian tumor. Routine pelvic examinations, unfortunately, have been disappointing in uncovering ovarian cancer at an early age.

Detection

Routine cytology, so useful in cervical malignancy is most disappointing; rarely is vaginal cytology positive with ovarian tumors. In the unusual instances where positive smears occur in ovarian malignancy, the cells are thought to have migrated through the fallopian tube and endometrial cavity and to have come to rest in the posterior vaginal fornix.

Diagnosis

Often laparotomy is necessary for the diagnosis of ovarian cancer and precise delineation of its extent. Guidelines are available for the management of patients with the likelihood of ovarian malignancy. Ovarian enlargement in the menopausal woman demands exploration by laparotomy or, in a few instances, by laparoscopy or culdoscopy. Persistent ovarian masses in the younger woman probably do not represent physiological enlargement and warrant visualization and biopsy.

Therapy

The standard treatment of ovarian cancer has been total abdominal hysterectomy and bilateral salpingo-oophorectomy. Radiation therapy or chemotherapy have been utilized for the treatment of residual disease. An overall five year survival of only 25% is reported using this regimen. The dismal outcome of many cases of ovarian malignancy apparently limited to one or both ovaries led to histologic studies of the paraaortic nodes at the level of the renal arteries, the primary drainage nodes for the ovaries. One quarter of these cases of apparently limited or Stage I malignancy were actually Stage III malignancy because of metastatic foci of disease found within the nodal tissue. Hence, it seems logical that future treatment regimens ought to rely on tissue samples from not only omentum and diaphragmatic surfaces, but also these paraaortic lymph nodes in order to provide adequate therapy.[1]

Vaginal Cancer

Primary carcinoma of the vagina is a rare lesion, comprising only 2% of all gynecological malignancies. Often it is impossible to determine whether this cancer arises primarily in vaginal epithelium or represents an extension from a primary cervical carcinoma. The majority of primary vaginal tumors are squamous in type, only a small fraction being comprised of choriocarcinoma, adenocarcinoma, and sarcoma, including mesodermal tumors and sarcoma botryoides. A vaginal adenocarcinoma usually represents metastatic spread from a primary focus either in the endometrium, the urethra, gastrointestinal tract, or rarely from a gestational choriocarcinoma.

Detection

A painless bloody discharge is the usual presenting complaint. In patients with this symptom, particular attention should be paid to examining the entire surface of the vagina, gently rotating the speculum so that no portion of the vaginal surface is obscured by its blades. Obvious lesions and also portions of the vaginal lining that seem unusually friable should be biopsied. Vaginal cytologic smear will be positive if ulceration of the overlying epithelium has occurred. It should not be assumed that a positive cytologic smear always originates from cervical cancer, the primary focus may be within the vaginal epithelium.

Therapy

More than half of all vaginal cancers occur on the posterior wall of the upper third of the vagina. Cancers of this locus appear not to metastasize as readily as those arising in the distal vagina, and these proximal lesions are staged and treated in a manner similar to cervical cancer. Spread to inguinal and deep pelvic nodes is a major mode of metastasis in this malignancy. Contiguous spread is common to the paravaginal tissues, bladder, rectum and vulva in advanced disease.

Vulvar Cancer

Carcinoma of the vulva comprises 10% of all genital malignancies, occurring in the sixth and seventh decades of life. This malignancy is predominantly squamous in type, although there are rare melanosarcomas arising in the perineum and occasionally, adenocarcinomas may arise from Bartholin's glands. Two unusual forms of intraepithelial carcinoma, Bowen's disease and extramammary Paget's disease occur in the vulva. Under the encompassing term of vulvar dystrophies, there is also a vast array of atrophic, often pruritic changes in the vulvar epithelium, which are poorly understood, often resistant to treatment, but without the potential for malignant transformation.

Detection

The best way to detect vulvar cancer is to biopsy all obvious lesions and persistently pruritic portions of the vulva, being careful to include adjacent apparently normal tissue. Disposable dermal punches remove small biopsies from skin previously infiltrated with local anesthetic. Generally, hemostasis can be achieved by gentle compression alone. The entire vulva should be sampled, including areas that appear grossly normal. Vulvar cancer is a multifocal disease, the majority of lesions arising on the anterior two thirds of the labia majora and the clitoris. Unfortunately, there is frequently a delay between the onset of first symptoms, pruritus or ulcer, and the initiation of definitive treatment. Both reticence on the part of the patient and misunderstanding on the part of the physician have contributed to delay. The significance of pruritus or persistent vulvar lesions as warning signals of malignancy should be well understood.

Therapy

It is of paramount importance to realize that carcinoma of the vulva cannot be equated with carcinoma occurring in the skin of any other portion of the body. This malignancy cannot be treated by partial or piecemeal excision; the only effective therapy is radical vulvectomy with dissection of the regional nodes. Radiation therapy is not of great use because perineal tissues do not tolerate ionizing radiation well. Because carcinoma of the vulva is essentially a superficial lesion, over 90% of patients who present with malignancy can undergo radical extirpation of the vulva and contiguous lymphatic bearing tissues. A salvage rate of up to 70% can be expected in cases amenable to this radical surgery. Carcinoma of the vulva spreads via a rich intermeshing lymphatic pathway, so that a small cancer in one labium may metastasize to nodes of the opposite groin, sparing those of the ipsilateral side. Lesions of the anterior vulva also spread directly to deep pelvic nodes via lymphatic pathways about the symphysis pubis. It must be emphasized that only extensive surgery will reliably cure carcinoma of the vulva.

In summary, gynecologic cancers are amenable to early detection and diagnosis. Readily available techniques of cell and tissue sampling aid the clinician aware of the pathophysiology of these malignancies. Effort expended to uncover these cancers in their early stages is rewarded by optimistic survival figures.

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Intussusception and Adenovirus

Philip Warren, M.D., Charles A. Fischbein, M.D. and Nicholas Mascoli, M.D.

Abstract—Three children with intussusception were seen within a 6 week period, at a community hospital. Adenovirus was demonstrated in all three and an etiological relationship is suggested.

Intussusception, the telescoping of part of the intestine into itself, was first described in the literature in the midseventeenth century by Paul Barbette.[1] Its etiology in infants and children remains obscure. In only 2-8% of all cases the leading point of intussusception is some recognizable anatomic lesion such as enlarged lymph node patch, Meckel's diverticulum, polyp of small intestine, small enterogenous cyst or ectopic pancreas.[2] This report presents three cases of intussusception recently encountered in our practice within a six week period. A common etiological factor is suggested.

Cases:

J.C., a 4 year old Caucasian male, was well until 9-28-74 when he had loss of appetite during the day and began to complain of severe, intermittent, crampy right lower quadrant abdominal pain that night. Vomiting ensued. He was admitted to the Waterbury Hospital with clinical evidence of intussusception. An effort by barium emema to reduce the ileo-colic intussusception was unsuccessful.[3, 4] Approximately 14 hours after onset of pain the child was brought to the operating room where the intussusception was reduced without difficulty. Multiple enlarged mesenteric lymph nodes were noted, the largest measuring 2 cm. in diameter. A mesenteric node biopsy showed reactive lymphadenitis. Unfortunately, viral isolation from the nodes was not attempted. Acute and convalescent serum specimens demonstrated an 8 fold rise in adenovirus titer. The child was discharged after a routine post-operative course.

T.M., a 3-year-old Oriental-Caucasian male, was well until the afternoon of 9-14-74 when he had a sudden onset of severe crampy abdominal pain and one episode of vomiting. Evaluation at Waterbury Hospital Emergency Room four hours after the onset of symptoms revealed a small tender mass in the right upper quadrant, markedly increased bowel sounds and an empty rectum. He subsequently expelled a bloody stool. An ileo-colic intussusception was uneventfully reduced surgically following an abortive attempt at reduction under flouroscopic control. Mesenteric lymph node enlargement was again noted, but again viral isolation was not attempted. Only a convalescent titer was available. This was significantly elevated, indicating a strong likelihood of adenovirus infection. Recovery was uneventful.

R.S., a 4-month-old Caucasian male, was well until the morning of 8-20-74, when following breakfast, he had the first of a series of episodes characterized by a piercing cry, projectile vomiting, pallor and lethargy. This sequence was repeated four more times in the course of the afternoon. The baby was referred to the Waterbury Hospital for admission with the diagnosis of intussusception. Initial examination revealed an acutely ill appearing infant with abdominal tenderness, decreased bowel sounds, and an empty rectum. Abdominal X-rays demonstrated a somewhat dilated transverse colon with a soft tissue mass in the area of the hepatic flexure. The chest X-ray showed an enlarged thymic shadow. Shortly after admission he passed a grossly bloody stool. Two attempts via barium enema to reduce the ileo-colic intussusception were unsuccessful. The surgical reduction was performed without difficulty. One enlarged mesenteric lymph node was biopsied and showed evidence of lymphadenitis. Rectal swab culture done prior to surgery demonstrated Adenovirus type 1, though confirmatory serological studies were not done.

Discussion

Many etiologies have been implicated regarding intussusception. However a consistently common factor in a series of cases is usually lacking. The seasonal distribution and the common viral agent in all 3 of our cases were therefore of interest. Three reports in the British literature in 1962 note a higher incidence of adenovirus in patients with intussusception than in simultaneously hospitalized controls.[5, 6, 7] Yet, we have uncovered no parallel reports in the American Pediatric literature and wish to call this observation to the attention of practitioners here.

The enlarged lymph nodes seen at surgery in the 3 cases reported may be a clue to the viral etiology. At the time of surgery, no patient demonstrated clearly that the nodes acted as the leading point for the intussusception; however, partial reduction by barium enema may have obscured this point prior to surgery in all three cases. In two of the three cases, lymph node biopsy indicated reactive lymphadenitis, and all three patients showed indications of infection with adenovirus. A review of viral studies taken from a random group of patients admitted to the hospital for other febrile illnesses and living in the same geographic area indicated an incidence of adenovirus of 30%. Indeed, excluding those patients with intussusception, the incidence of adenovirus was approximately 15%. (Table I)

Summary

Three patients with ileo-colic intussusception were diagnosed and treated within a six week period. The presence of adenovirus was noted in all on the basis of serologic evidence in two cases and viral isolation from the rectal swab on the third. A common etiologic factor is suggested. These cases should stimulate

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other physicians caring for children to include viral studies in their etiological consideration of infants and children with intussusception.

Table I

Viral Isolates	*Number of Patients*
para influenza	1
adenovirus type 2	1
echovirus type 22	1
echovirus type 16	2
adenovirus type 1	1 (1)
echovirus type 4	4
poliovirus type 2	1
adenovirus untyped	3 (2)
coxsackievirus type B2	2

( ) = patients with intussusception

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Ejaculatory Incompetence

Alan J. Wabrek, M.D., F.A.C.O.G. and Carolyn J. Wabrek, M.Ed.

Abstract—Ejaculatory incompetence, where the male is unable to ejaculate into the vagina, is an entity that must be ruled out in evaluation of the infertile couple. A common psychodynamic is a fear of impregnating the female. Treatment techniques are discussed.

Introduction

Ejaculatory incompetence is an inability to ejaculate into the vagina. In reality, ejaculatory incompetence encompasses a spectrum whereby the male may have never ejaculated by: (1) nocturnal emission; (2) self-masturbation; (3) partner masturbation; (4) oral-genital sex; (5) sexual intercourse; or some combination thereof. If the adult male has never ejaculated by one of these means, an organic etiology must be considered; but if a male has ejaculated by at least one of the above methods but is unable to ejaculate into the vagina then the diagnosis of ejaculatory incompetence can be made.

It is important to bear in mind that ejaculatory incompetence is a separate and distinct disease entity from retrograde ejaculation. In the latter condition, ejaculation does take place, but is retrograde into the urinary bladder. The diagnosis can easily be established by examining the first voided urine, post ejaculation, for spermatozoa. In ejaculatory incompetence, no spermatozoa would be found in the urine. The physician must also be careful in making the diagnosis of ejaculatory incompetence on an older male. As males age, their need to ejaculate decreases, and depending on the coital frequency an older male may only ejaculate every second or third time that he has intercourse. This condition does not warrant a diagnosis of ejaculatory incompetence. In a similar fashion, a young couple may be evaluated for infertility, and, when ovulation is assumed to have taken place, intercourse may be strongly encouraged. In some of these instances, particularly if the male is having intercourse on multiple occasions during a twenty-four hour period, he may not ejaculate on several of those occasions. This does not warrant a diagnosis of ejaculatory incompetence. The diagnosis should be reserved for those males that have never ejaculated into the vagina.

Implications

The most obvious implication of ejaculatory incompetence is lack of conception. Usually, the diagnosis of ejaculatory incompetence can be readily made by a thorough history taking. But if the couple is relatively inexperienced sexually, or relatively naive sexually, the diagnosis may not be so apparent. In these latter instances, examination of the cervical mucus during a post-coital examination will not reveal any spermatozoa. While one possibility may be azospermia, the diagnosis of ejaculatory incompetence certainly should be entertained.

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Psychodynamics

A common psychodynamic of males with ejaculatory incompetence is a fear of impregnating their female partners. A male patient with the diagnosis of ejaculatory incompetence related his story to us as follows: When he was a young boy, he could remember his mother sitting in the living room experiencing a considerable amount of lower abdominal pain. When she stood up, a sudden gush of blood came through her skirt and made a large stain on the rug. He remembered his mother starting to cry and running toward the bathroom. Later on, he was told that his mother was having a miscarriage and he related how terrifying it was for him to see his mother experience such pain and uncontrolled bleeding. The psychological conflict this produced for him was exemplified by the question, "How do I impregnate my wife, whom I love, and put her through all of this pain and bleeding?" He resolved the conflict by being unable to ejaculate into his wife's vagina, thereby avoiding the pregnancy and the potential implications thereof.

Another dynamic relates to the fear of passing undesirable personal characteristics on to progeny. A congenital anomaly, or a fear thereof, should be searched for in each male with ejaculatory incompetence, or in one of his ancestors.

One dynamic has been present with virtually all of the couples seen for ejaculatory incompetence, and it is as follows: Since the male does not ejaculate into the vagina, he can maintain an erection during intercourse for thirty to forty-five minutes, until he literally gets physically exhausted. If the female is orgasmic, she oftentimes will be multiorgasmic with such prolonged intravaginal stimulation. And while it would appear that they have a very good sexual life, every female we have talked to has felt pretty inadequate sexually, because she could not get her male partner to ejaculate. Many times she interprets this as a deficiency on her part and if only she was a little more sexy, had bigger breasts, or was better sexually, of course, she would get him to ejaculate.

Treatment

In treating the male with ejaculatory incompetence, it is crucial that the physician establish the psychogenic etiology. As long as the male has ejaculated on at least one occasion, by either a nocturnal emission, masturbation, or oral sex, but has not ejaculated into the vagina, the diagnosis is made. If the male's only ejaculation has been with a nocturnal emission, and the male has never masturbated himself, a reasonable starting point is to help the male get more comfortable with his own body, and get more comfortable with self masturbation. Permission and encouragement from the physician are extremely important. A word of caution needs to be stressed, though: If the physician is uncomfortable with self masturbation, a mixed message may result. For example, if the physician tells the patient it is okay for him to masturbate, while the physician's body language, either by a softening of his voice or an abruptness tells him it is not okay, only confusion results which is detrimental to the patient. If the physician can be congruent and is comfortable recommending self masturbation, then indeed it can be therapeutic. In the process, the male patient will learn about his own body and about his own ejaculation in particular.

Once that is accomplished the next visit should be scheduled with the couple so that the male can literally teach his female partner what kind of manual stimulation he needs to ejaculate. If desired by the couple this may also include oral genital stimulation. Again, helping the male become more comfortable ejaculating in the presence of his female partner. As they do get more comfortable with each other, and particularly as the male gets more comfortable ejaculating in the presence of his female partner either by manual or oral stimulation, intercourse can take place and there is a very good possibility that ejaculation will take place. It may be a time consuming process, but can be a very rewarding experience for the couple, and for the physician who has been comfortable to undertake the treatment process.

The Influence of Environmental Factors on Maternal and Neonatal Blood Lead Levels

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Abstract—The umbilical cord red blood cell lead concentration of 182 neonates and venous lead concentration of 114 mothers, including 90 paired samples were related to specific maternal environmental risk factors. Urban dwelling, race, proximity to heavy traffic flow and older housing were associated with increased fetal lead levels. There was a direct correlation between maternal and neonatal lead levels. The mean maternal Pb level was 1.3μmoles/L. RBC's. The mean neonatal Pb level was 1.0μmoles/L. RBC's with the mean maternal-fetal difference of 0.3 μmoles L. RBC's.

On the basis of demographic data, it is possible to define a population at birth which has sustained increased environmental lead exposure from conception.

Speculation

Infants exposed in utero to high maternal lead concentrations from an urban environment heavily contaminated with lead return after birth to that environment where exposure continues. Accordingly, they enter the highest risk years for lead toxicity with an already elevated body burden of lead. Thus, lead is a hazard for the infants not from the time he begins to explore his surroundings but from conception. Exposure is from multiple sources and in the opinion of the authors, there is a significant contribution from tetraethyl lead resulting from gasoline emission. This exposure carries over to the post-natal years. This cycle can be interrupted only by programs directed at reduction of total environmental lead contamination.

Urban lead screening programs carried out during the past decade have provided unequivocal evidence that between 10% and 50% of urban children chronically carry a body burden of lead in excess of the accepted upper limits of normal of 40μg% in whole blood.[1, 2] The long term effects of this lead burden on physical and psychological development have only recently received attention. Several investigators have demonstrated an association between neurologic deficits in children and increased body lead burdens,[3, 4, 5] although conflicting reports have also been published.[6, 7]

It has been assumed that pica for leaded paint is the major if not the only source of lead for preschool children. Recent studies of whole blood lead levels in neonates, however, have indicated that significant amounts of lead are acquired in utero.[8-12] The present study was undertaken to better elucidate maternal environmental factors which influence fetal lead acquisition. Such data could be useful in identifying prior to birth and prior to the development of lead pica a population at increased risk for subsequent lead poisoning.

Materials and Methods

Population. Approximately 500 women delivered of term infants in two general hospitals in the greater Hartford area during the summer months of 1972 and 1973 were asked to take part in a study which included testing cord and maternal blood for lead content. Those women who consented to participate completed a questionnaire which included the following data: race or ethnic group, age of present dwelling, socioeconomic class, use of glazed pottery, cigarette smoking, prior known exposure to lead and maternal ingestion of non-food substances. In some instances, demographic data was obtained from maternal or infant medical records. In total, demographic data along with appropriate blood samples were obtained from 114 mothers and 182 neonates. Ninety paired maternal-neonatal samples were identified.

Maternal residence was defined as urban on the basis of population density. Maternal exposure to leaded gasoline was determined by plotting home addresses on city or town maps. An estimate of the

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number of cars passing daily was derived from traffic engineer surveys or estimated according to the type of roadway. The level of greater than 10,000 cars/day was chosen to identify a roadway with high traffic flow.

Collection of blood samples

Umbilical cord venous blood samples were obtained at birth by the obstetrical staff. Maternal venous blood samples were collected in one hospital during labor; and in the other approximately two weeks pre-partum. Since there was no significant difference in lead content between the two sets of maternal samples, the results were combined. All blood samples were collected in lead-free heparinized Vacutainer* tubes with a minimum allowable sample of 2 cc. and an average of 8-10 cc. A microhematocrit determination was carried out within twelve hours of collection. Any sample for which the hematocrit could not be determined was discarded. After measurement of the hematocrit all samples were frozen until lead determinations could be performed.

Blood lead determinations

All lead determinations were performed within five days of sample collection, at Hartford Hospital Clinical Chemistry Laboratory by the atomic absorption spectrophotometry method of Farrelly and Pybus.[13]

Results were reported in the International System (SI) micro moles (μmoles) per liter of red blood cells (RBC) by calculation of the RBC/liter base unit from the hematocrit value. To convert the SI units to more commonly used units of μg% the SI value should be multiplied by a factor of 8.

Data analysis

Data obtained was codified for computer analysis. Significance tests were performed using either student t-test or f-test analysis of variance depending on the number of variables involved. Tests performed on a given variable utilized the blood lead levels of those individuals who had given information concerning that variable. Statistical correlations were determined using Pearson's correlation coefficient.

Results

182 umbilical cord blood samples and 114 maternal samples were analyzed for red blood cell lead content. The distribution of the neonatal and maternal blood lead levels is illustrated in Figure 1. The mean umbilical venous blood lead level (± 1 S.D.) was 1.0 ± 0.51 μmoles/L. of RBC's with a range from 0.3 μmoles/L. of RBC's to 5.5 μmoles/L. of RBC's. The mean maternal venous blood lead level (± 1 S.D.) was 1.3 ± 0.51 μmoles/L. of RBC's with a range from 0.1 μmoles/L. of RBC's to 4.4 μmoles/L. of RBC's. The highest values found, 4.4 and 5.5 μmoles/L. of RBC's, were a paired sample from a mother and her child respectively.

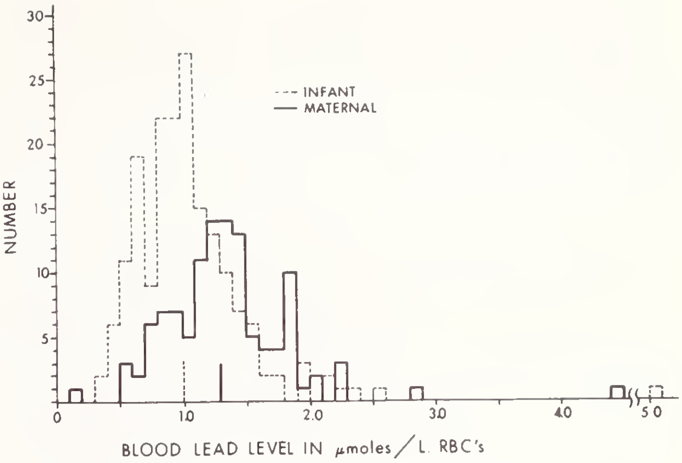

Figure 1

Distribution of maternal and cord blood lead levels. The mean of each group is indicated in the figure by a vertical line on the abscissa.

Ninety maternal and umbilical cord blood pairs were available for comparison. The correlation between blood lead levels of individual pairs is shown graphically in Figure 2. For these paired samples the mean of the maternal blood lead levels and the mean of umbilical cord blood lead levels were 1.23 μmoles/L. of RBC's and 0.93 μmoles/L. of RBC's respectively. The difference is significant (p.$<$ .05). The mean difference was 0.3μmoles/L. of RBC's. There was a positive correlation between maternal and cord blood levels ($r = .4042$) with a p.$<$ .001. A linear relationship was found in the range observed described by the equation: Neonate Pb = .3714 Maternal Pb + .5130.

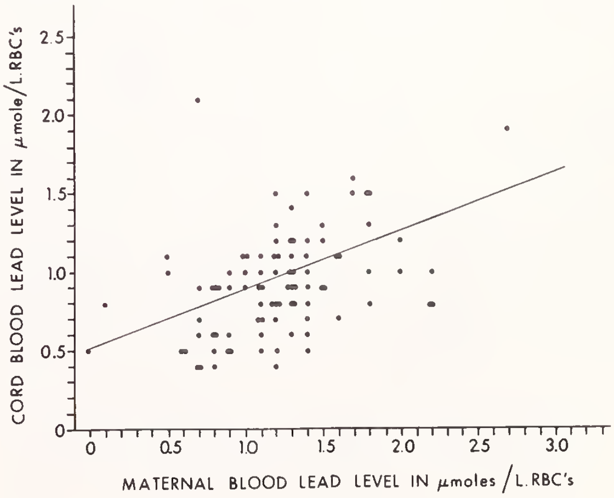

Figure 2

Individual maternal blood lead levels plotted against corresponding cord blood lead levels of their infants. Regression line described by equation: Infant Pb = .3714 (Maternal Pb) + .5130.

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Of the demographic and environmental variables studied three showed significant correlation with increased mean blood lead levels in both mothers and neonates. (Table 1.) These were: 1) racial or ethnic groups: The Puerto Rican group was highest followed by Blacks and Caucasians, 2) dwelling in an urban area, and 3) residence in a dwelling greater than 25 years of age. Maternal residence on a street with a daily traffic flow of greater than 10,000 cars correlated significantly with increased neonatal blood lead levels (p.< .05). The correlation of maternal blood lead level and traffic density was less significant (p. = 0.1). The distribution of blood lead levels found in the significant groupings for neonates is shown graphically in Figure 3. No significant relationship was found between blood lead level in either mother or neonate and maternal age, social class, maternal smoking, use of glazed pottery and maternal pica.

Table 1

MEAN BLOOD LEAD LEVELS FOR THE EPIDEMIOLOGIC GROUPINGS FOUND SIGNIFICANT ($p < .05$)

	Mean infant lead (μ moles/L. RBC's)	*Mean maternal lead (μ moles/L. RBC's)*
Residence		
Urban	1.07 ± .57 (106)*	1.37 ± .57 (71)
Non-urban	0.91 ± .38 (73)	1.16 ± .34 (42)
Race/Ethnic group		
Puerto Rican	1.25 ± .84 (42)	1.58 ± .81 (22)
Black	1.07 ± .29 (12)	1.34 ± .57 (10)
White	0.92 ± .32 (128)	1.20 ± .35 (81)
Traffic Flow		
10,000 cars/day	1.13 ± .67 (65)	1.37 ± .63 (41)**
10,000 cars/day	0.93 ± .38 (106)	1.24 ± .42 (71)
Age of Housing		
25 yrs. old	1.19 ± .74 (53)	1.43 ± .57 (49)
25 yrs. old	0.90 ± .36 (46)	1.17 ± .46 (52)

*Numbers in parentheses are the number of samples obtained.
**Difference significant to the $p < .10$ level.

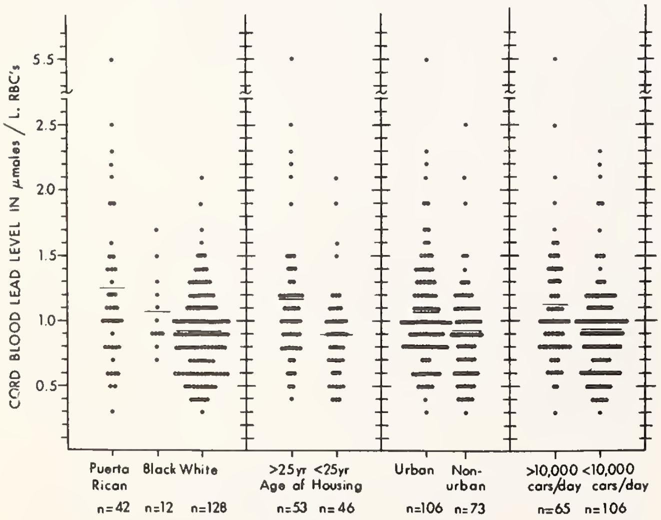

Figure 3

Distribution of cord blood lead levels for epidemiologic groupings found significant ($p < .05$). Mean for each group is indicated by horizontal line.

For a population of this size and with these characteristics, it is not possible to assess the effect of each of the significant variables individually. As is shown in Table 2, urban dwelling, exposure to high traffic flow and residence in a dwelling over 25 years of age, are constant features of the environment of the sample of Blacks and Puerto Ricans studied.

Table 2

DEMOGRAPHIC CHARACTERISTICS OF RACIAL/ETHNIC GROUPS FOR THOSE FACTORS FOUND TO BE SIGNIFICANTLY RELATED TO INCREASED BLOOD LEAD LEVELS.

	Urban	*Traffic Flow <10,000 cars/day*	*Housing < 25 years old*
Puerto Ricans	40 of 42 (95%)	25 of 42 (60%)	18 of 24 (75%)
Blacks	11 of 12 (92%)	6 of 12 (50%)	4 of 5 (80%)
Whites	55 of 128 (43%)	34 of 116 (29%)	30 of 69 (44%)

Comment

The large body of statistical data which has been compiled from urban lead screening programs deals almost exclusively with children from 1-6 years of age. Previously there have been no data available to determine whether the same environmental factors which place these children in high risk of increased body burden of lead are applicable to the developing fetus. This study provides statistical evidence that an infant born of a Puerto Rican or Black woman, who is an urban dweller, living in a home more than 25 years old, on a street with a daily traffic flow of greater than 10,000 cars has a significantly increased risk of having an elevated body burden of lead.

In the geographic area studied no industrial lead contamination is known to exist which might increase individual blood lead values nor was there evidence of maternal pica. Previous examinations by one of the authors (ML) of food, drinking water and cooking utensils in different racial or ethnic groups within the city of Hartford has not provided evidence of significant differences in lead exposure from these sources. It is our opinion that the increased lead levels found in Puerto Rican and Black neonates is a function of the increased exposure of these groups to the previously noted variables associated with urban living.

The lead contamination of the maternal environment in the city, on the busy street, in older housing and in Puerto Rican and Black homes comes from non-pica sources which are not yet well identified. Recent investigations in Hartford, Connecticut[14] and Rochester, New York[15] point to a possible source of this form of lead contamination. The mean lead concentration of outdoor dirt samples in Hartford's inner city was found to be 1200μg/g, while that of household dust samples was 11,000μg/g regardless of whether or not the surface tested was painted.[14] Although this lead may come in part from microscopic particles of deteriorating leaded paint or plaster the contribution of particulate automobile lead emissions may be of major importance. This accumulated lead "fallout," as well as possible direct inhalation of automobile lead emissions may represent a significant unavoidable lead source for all persons in certain urban areas. Caprio and co-workers found an association between heavy traffic density, proximity of house to road and excessive lead absorption in children.[16] In the present study neonatal lead levels could be similarly correlated with traffic density. Although the distance from the street to dwelling is not known for all subjects in the present study, the majority of older urban houses are less than 100 feet from the street.

The special environment of the unborn fetus appears to guarantee little or no protection from the maternal exposure to lead contamination. The paired neonate-maternal data obtained in this study substantiate Barltrop's earlier findings from a smaller study group in England which demonstrate a small lead gradient between maternal and umbilical cord bloods.[11] Gershanik and co-workers have demonstrated a relationship between maternal and fetal lead levels similar to that of the present investigation. The levels in that study were significantly higher among mothers who were urban dwellers.[8] Thus the fetal exposure to lead is in direct proportion to maternal exposure. Barltrop suggests that this small gradient between mother and fetus may result from the higher metabolic rate of the fetus which results in lead being stored faster than the maternal circulation can supply it. There are however, no data relating to placental lead permeability, nor are data available to substantiate a higher total body lead content in the neonate.

The mean umbilical cord blood lead level for all neonates in the present investigation is slightly lower than those found in previous studies.[8-12] The increased size and variation in environmental background of the sample population in the present study may account for this difference. Brief storage of blood in the frozen state where absorption to glass is possible may have influenced the results, although this effect is believed to be minimal. Considering the present limitations in methodology of blood lead determinations, it is difficult to compare the results from different laboratories. A reference method of blood lead similar to that developed for measurement of calcium in serum represents a priority health need.

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Unusual Scan Presentations of Splenic Rupture

Richard P. Spencer, M.D., Ph.D., John J. Sziklas, M.D. and Forbes Delany, M.D.

Abstract—Two cases, of subsequently documented splenic rupture, are presented. In each, there was an unusual finding on the ^{99m}Tc-sulfur colloid scan. The first case showed scan evidence of massive displacement of the spleen, with compression of the gastric air bubble radiographically. Displacement was due to a hematoma of estimated 1.5 liters capacity. In the second case, there was markedly reduced uptake of radiocolloid in the spleen as compared with the liver. It was hypothesized that the prior intrasplenic bleed may have had a tamponade effect, decreasing further blood flow to the organ.

The usefulness of spleen scanning, in diagnosing splenic hematoma or rupture, has been pointed out in recent studies. The technique involves the intravenous injection of a radiopharmaceutical (such as ^{99m}Tc-sulfur colloid) which localizes in the spleen. Since the procedure is noninvasive, painless, and has a low radiation exposure, it has gathered increasing acceptance. The spleen scan appears to be as accurate as arteriography in cases of splenic trauma. The commonest scan findings, in splenic trauma, are separation of functional splenic continuity (by clot or by frank tearing of the tissue), an indistinct margin resulting from subcapsular hematoma, or a slightly increased displacement of the spleen from the body wall.[1, 2, 3] We have recently seen two additional findings in patients who subsequently had surgical documentation of splenic rupture.

Case Reports

Case 1: A 53-year-old woman was in an automobile accident. Left upper quadrant pain and a low hematocrit were noted on admission. Upon a further fall in the hematocrit, a spleen scan was performed within 10 hours of the accident. The ^{99m}Tc-sulfur colloid scan (Figure 1) showed massive displacement of the organ from the body wall. When combined with the chest radiograph (Figure 2) which revealed a compression of the gastric air bubble, a diagnosis of splenic hematoma was made. Upon surgical exploration, a large hematoma (estimated volume 1,500 cm^3), was noted to

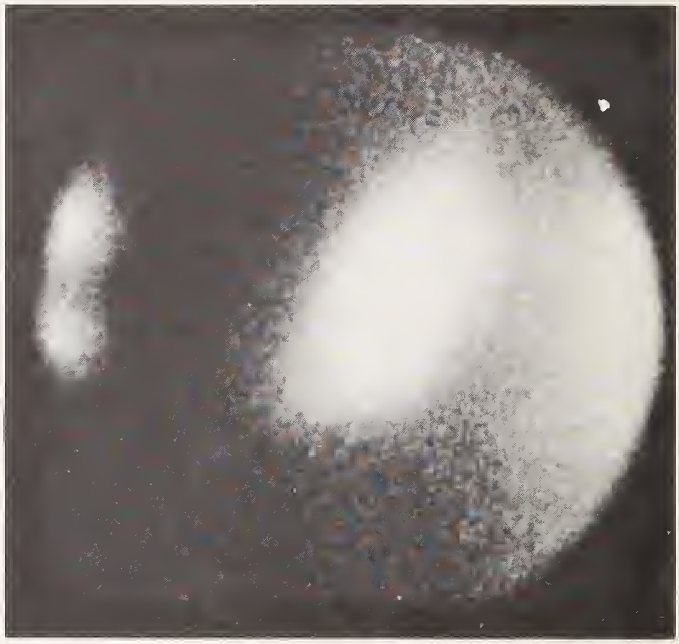

Figure 1

Posterior scintiphoto in the first case. Displacement of the spleen from the lateral body wall can be appreciated by noting the position of the radioactive marker resting on the skin (on the viewer's left).

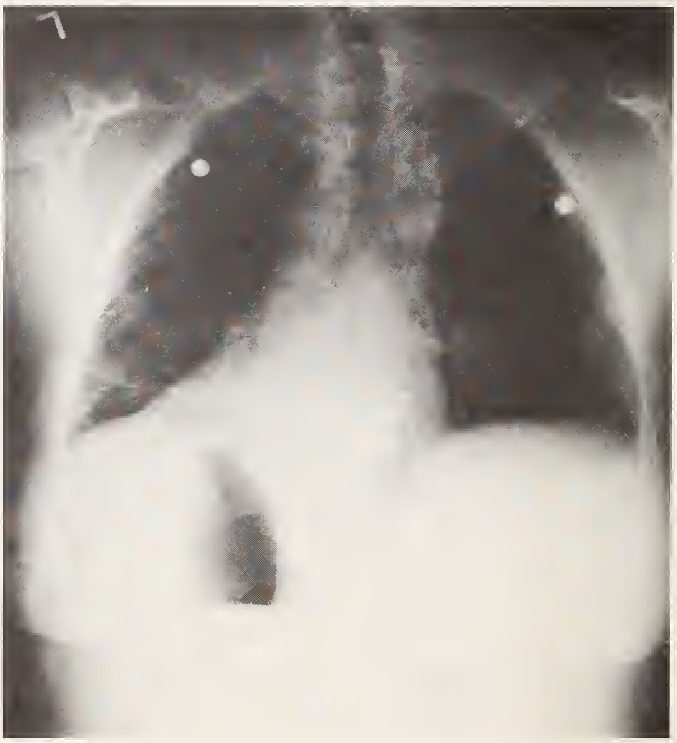

Figure 2

Chest radiograph showing the compressed gastric air bubble in the first case (the anterior radiograph has been printed in reverse, so that it can be directly compared with Figure 1).

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be adherent to the spleen on its lateral aspect. There was also free blood present in the peritoneal cavity. Subsequent examination of the spleen revealed an organ weighing 200g, with a laceration on its lateral border.

Case 2: A 23-year-old man noted pain in the left upper quadrant, following participation in a basketball game. When seen 3 days later, he was slightly febrile, and had left upper quadrant tenderness. The ^{99m} Tc-sulfur colloid scan (Figure 3) revealed a marked diminution in radiocolloid accumulation in the spleen. That is, the posterior spleen/liver ratio (per unit area) was considerably less than 1 to 1. There was also a suggestive linear tear in the lower one-third of the spleen. An arteriogram established a splenic rupture with an inferior hematoma. This was confirmed at the time of surgical exploration.

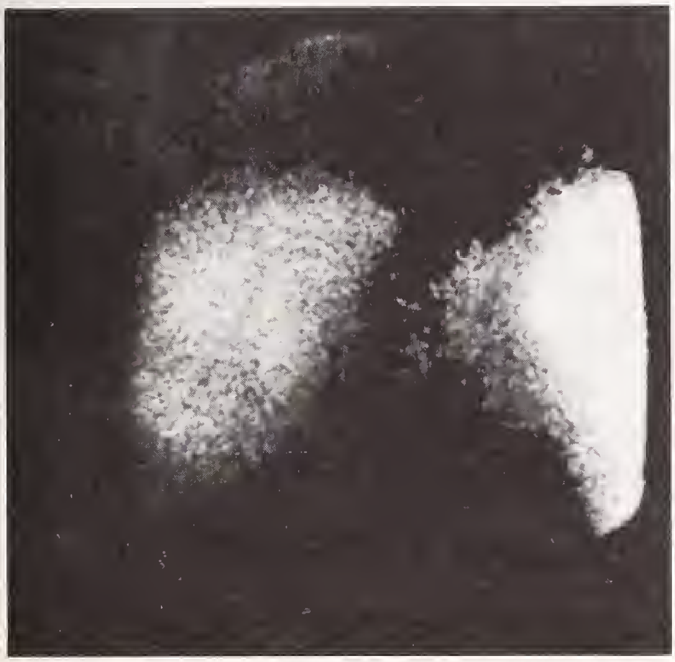

Figure 3

Posterior scintiphoto in case 2. Markedly decreased activity per unit area in the spleen, as compared to the liver, can be appreciated in this view. A linear "tear" in the lower third of the organ is suggested.

Discussion

It has been noted that scanning in cases of suspected splenic rupture should be carried out with a radioactive marker on the skin, in order to document increasing displacement of the organ from the lateral wall.[2] In the present case, the hematoma was so large that the spleen was clearly displaced from its normal position on scan, and the gastric air bubble was compressed (Figure 2). Such findings might be considered as indications for immediate surgical intervention.

In the second case, there was markedly decreased accumulation of radiocolloid in the spleen, as compared with the liver. In the spleen not deranged by other disease processes, radiocolloid extraction is largely proportional to the relative blood flow to the organ. Hence, we can reason that at the time of injection of the radiocolloid, there was markedly decreased blood flow to the spleen. Since the trauma may have occurred 3 days prior to the date of the scan, we might hypothesize that the intrasplenic bleeding caused vascular compression and impairment of inflow. It would be of interest to study such cases sequentially by means of the scan and by angiography, to determine if decreased intrasplenic flow can be further documented.

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Medicine Depicted in Ancient Egyptian Art

William C. Butterfield, M.D.

Historians of medicine owe Egyptian art a considerable debt, for aside from the information gleaned from the few medical papyri, much of what is known about the ancient Egyptian physician has been derived from the study of the reliefs, statues, and paintings.

The Greek physician, Herodotus, the "father of history," wrote in 450 B.C. that the Egyptian doctors were specialists.

> "The art of medicine among them is distributed thus: each physician is a physician of one disease and no more; and the whole country is full of physicians, for some profess themselves to be physicians of the eye, others of the head, others of the teeth, others of the affections of the stomach and others of the more obscure elements."[1]

For years this statement was rightly viewed with skepticism. While obviously exaggeration, there is some support among excavated art objects to lend credence to his words. The relief of Sekhet-n-ankh, the "nose-doctor" of King Sahure, dating about 2550 B.C. is one such piece of evidence (Figure 1). In the inscription accompanying the relief is an account of this physician's achievement in "curing the king of a sickness of the upper air passages for which this monument has been erected to him."

However, it must be understood that these ancient physicians were not specialists in the modern sense of the word. Today a doctor narrows his field of endeavor because it is impossible for him to assimilate the extensive mass of clinical and technical detail covering the general field of medicine. In ancient times many practitioners only knew how to diagnose and treat one or a few types of disease and were "specialists" in the sense of limiting their area of practice—not in the extensive amount of knowledge they had concerning that particular area.

More evidence for specialization is found in the hieroglyphics chiseled on a stele found in 1926 at Giza, dating back to the Fourth Dynasty (2323-2563 B.C.). The central figure depicted on the surface of this stele is a man called Iry, court physician and Chief of Court Physicians. The hieroglyphics describe him as "eye doctor of the palace," "doctor of the abdomen," and "guardian of the royal bowel movement."

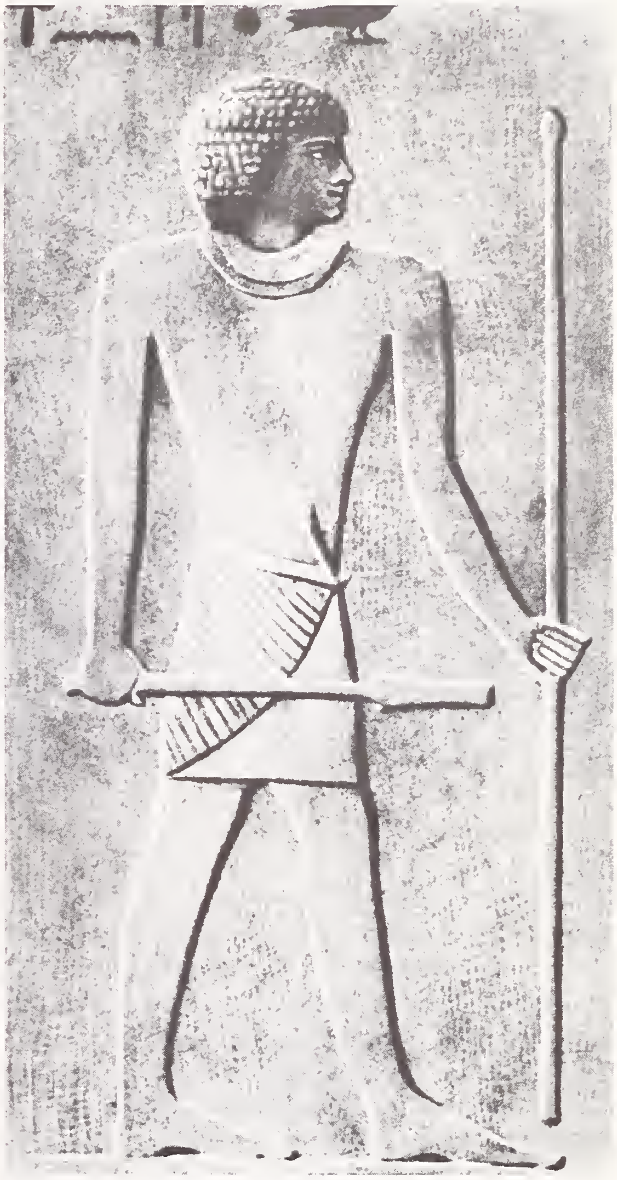

Figure 1

Sekhet-n-ankh, King Sahure's Physician. c. 2550 B.C. Wooden panel relief.

Evidently the royal anus needed considerable "guarding," for there are many remedies in the medical papyri concerned with its care. All sorts of fluids from oil to beer were injected for the purpose of being absorbed. Quantities ranged from one to three pints and contained a large variety of ingredients. According to Pliny, the Egyptians were taught the use of the enema from the ibis, a bird that evacuated its own rectum using its beak as an enema funnel. In addition

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to enemas the anus was also treated with applications of hot bricks or hot sand wrapped in linen. A recipe in the Ebers Papyrus for prolapse of the rectum reads as follows:

> "For a dislocation in the hinder part: myrrh, frankincense, rush nut from the garden, mhtt from the shore, celery, coriander, oil, salt, are boiled together, applied in seed wool and put in the hinder part."[2]

Therefore, not only had medicine reached a stage where there was beginning specialization, specialization in the sense of limitation to a narrow spectrum of disease, but physicians had gained enough prestige as early as the Old Kingdom period to enjoy a prominent place in the royal household. This position of favor continued throughout the history of ancient Egypt and there is evidence in the form of the statue of Iwty of physicians being employed in the royal courts as late as the times of Rames I and Sethos II in the New Kingdom.

Another prominent court physician was Nin-ankh-re who lived during the Sixth Dynasty (2433-2280 B.C.). The statue was discovered at Giza by Professor Hermann Junker. The statue, portrayed as a scribe, probably depicts the type of physician responsible for the medical papyri which were used as training manuals for young physicians and as consulting sources for older practitioners. These physicians deserve a great deal of credit for their ability to hold themselves aloof from the current superstitions of the day and to record faithfully their empirical observations. The Edwin Smith Papyrus is an outstanding example of this scientific spirit—containing observations on unilateral paralysis from head injuries, bilateral paralysis from spinal cord injuries and methods of reducing fractures such as the supine position with a pillow between the shoulders for a broken clavicle or the modern method of reducing a dislocated mandible with the downward pressure of the physician's thumbs on the lower molar teeth. These observations and the others contained in the Smith Papyrus are all the more remarkable since this papyrus is the earliest written surgical treatise in existence, parts of which date back to 3000 B.C.

The relief of Hesi-Re (Figure 2) is the earliest known representation of a dentist. Hesi-Re lived in the reign of King Zoser, about 3000 B.C. The fact that toothist and physician are mentioned together in his title, with the term "toothist" preceding "physician," probably indicates that Hesi-Re was a physician who specialized in dentistry. Egypt was the first ancient civilization to develop the dental art and remedies for dental disease are recorded in the various papyri.

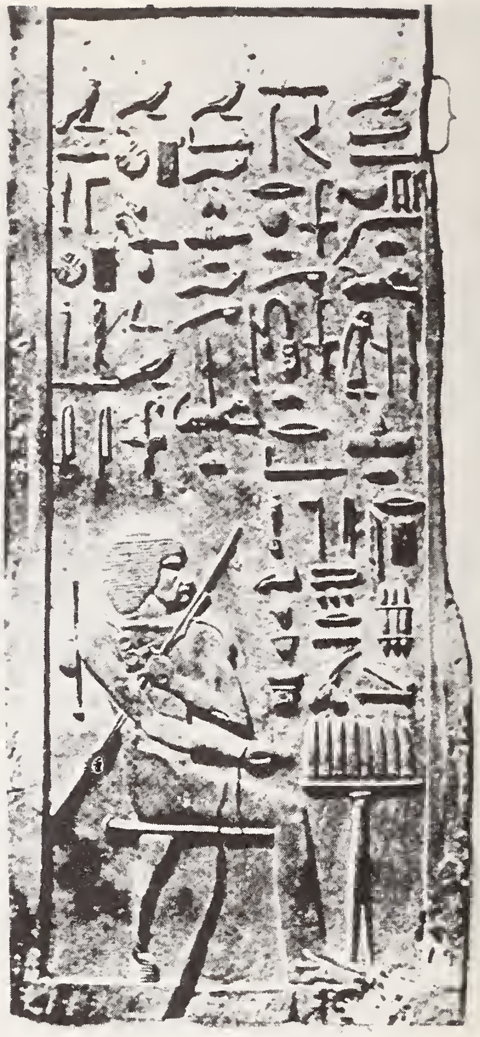

Figure 2

Hesi-Re, Chief of the Toothists and the Physicians. (c. 3000 B.C.) Museum of Egyptian Antiquities, Cairo.

What types of disease did the Egyptian physicians see and attempt to treat? Most of the answers on this point come from a study of the ancient papyri, but several clues have been provided by the art objects themselves. A clay statuette dug up in the course of excavations at Assuan and another statute dating from the Fifth Dynasty suggest that the ancient Egyptians were sufferers of Pott's disease (Figure 3). Pott's disease, tuberculosis of the spine, classically produces a projecting deformity of the upper vertebrae, the so-called gibbus. Search among the mummies showed that several had disease compatible with spinal tuberculosis and one such mummy, that of a priest of Amon, Nesperenhep, had in addition to the typical curvature of the spine, a second classical symptom of spinal tuberculosis, a psoas abscess.

A stele dating from the Eighteenth Dynasty (Fourteenth Century B.C.) pictures a man with an atrophied right leg, supporting himself on a crutch and imploring the goddess Ishtar to cure him (Figure 4). This stele has been cited as evidence for the existence of poliomyelitis in ancient Egypt, but the idea has provoked considerable controversy and the etiology of the atrophy remains a mystery. Trauma, with an accompanying peroneal palsy might be a more simple and logical suggestion.

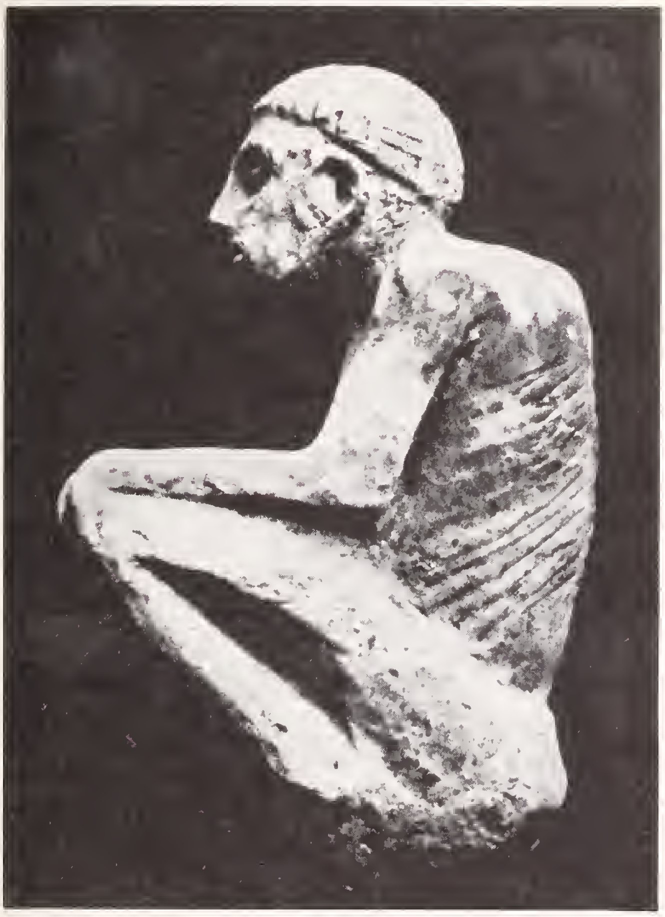

Figure 3

Clay statue of a man with Pott's disease. Private collection, Paris.

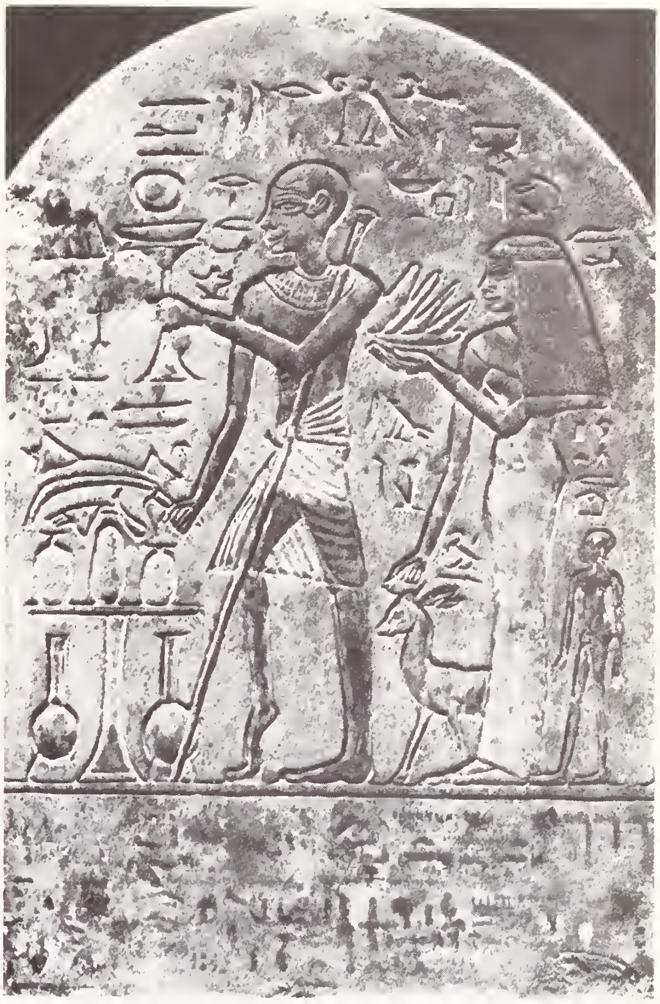

Figure 4

Detail from an XVIIIth Dynasty stele.

Another debatable case is a relief of Cleopatra, the last queen of Egypt (69-30 B.C.), with its suggestion of a goiter (Figure 5).

Blindness, a common sequela of the prevalent ophthalmic diseases, particularly trachoma, seen in Egypt (Figure 6, Figure 7) is often depicted in art. The Papyrus Ebers, etc. copied about 1500 B.C. from an original dating at least in part from 1000 years earlier, contains 93 recipes against eye diseases. The diseases included trachoma, leucoma, chalazion, pterygium, trichiasis, ectropion, and probably cataract—at least according to the translations of these entities by Dr. Ebbell of Norway. Among the variety of remedies are copper derivatives, the predecessors of the copper sulfate stick still in use for the treatment of trachoma.

Herodotus mentioned eye specialists in his history of Egypt and there exists a legend of Diodorus Seculus about the son of a Pharaoh who, becoming blind, was instructed to wash his eyes with the urine of a constant woman. It was a long search before he found such a woman and was cured of his disease.

Of all the congenital abnormalities, dwarfs have been the most popular among sculptors and painters. From the time of the Old Kingdom, they were represented by the Egyptians with considerable anatomical accuracy (Figure 8). The Egyptians became aware of "small people" by their trade in Central Africa. Pygmies were imported and kept at the royal household not only because of their rarity, but also for their dances which, being of an unknown ritual character, were fascinating to the Egyptians who had begun to develop a taste for the exotic. The Egyptians knew the difference between pygmies who were normally small races and true dwarfs who were pathological abnormalities. Achondroplastic dwarfs with their short bowed legs, normal torso, and large heads were very popular in Egyptian art (Figure 9). The Queen of Punt (Sudan) represents this type of dwarf. This relief (c. 1500 B.C.) demonstrates that dwarfism did not prevent a person from gaining considerable power; after all, some of the gods themselves were dwarfs as illustrated by Bea, god of war, and Ptah-Sohar, god of fire.

Of interest to the general surgeon is the bas-relief from the tomb of Horembeb, believed to depict an old man with a large umbilical hernia (Figure 10), while

Figure 5
Head of Cleopatra. Detail from a bas-relief at Dendera.

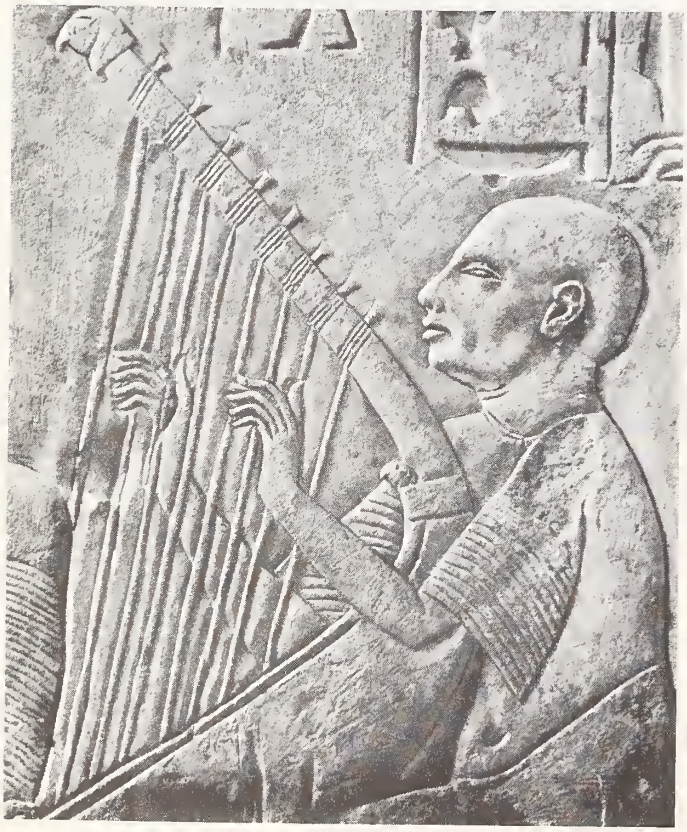

Figure 6
Blind harpist. Detail of a bas-relief. Age of King Tutankhamen. Rijksmuseum van Oudheden, Leiden.

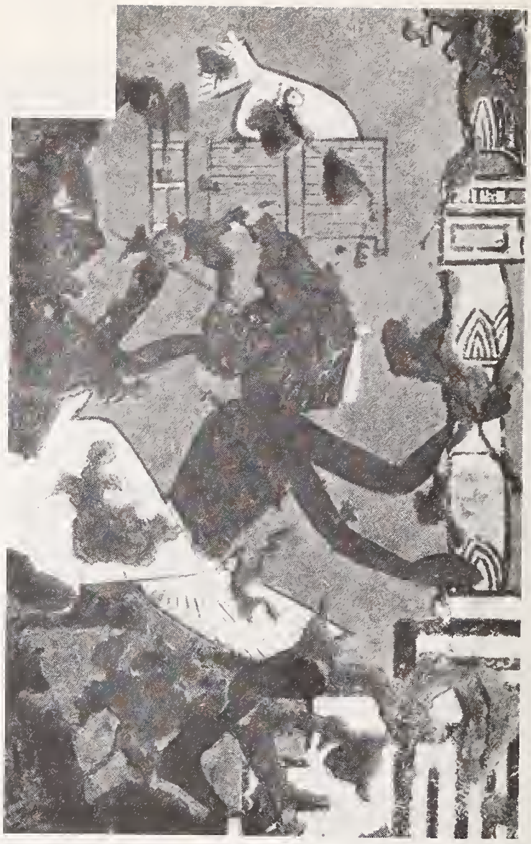

Figure 7
Oculist at work. From a fresco on a tomb dating from the XIXth Dynasty.

Figure 8
Dancing pygmies from Licht. Statuettes in the Metropolitan Museum, New York. Middle Empire. (Part of a mechanical toy found at Licht in a tomb).

the orthopedist will be interested in the Thirteenth Century B.C. wall painting showing the reduction of a dislocated shoulder (Figure 11).

A relief from the tomb of a high-ranking official found at Sakkara and dating from the second millennium provides a clue to the type of surgery practiced in ancient Egypt (Figure 12). It depicts two boys being circumcised by operators using crude stone instruments. This practice had been observed in mummies dating from the earliest times, but was not a constant practice.

Scenes portraying the operation, pictures and statues of circumcised people, allusions to it by classical writers and in the papyri of the Roman period, and evidences of it in the mummies themselves are not too plentiful. Evidently it was not a practice limited to the priesthood for many mummies of kings show no signs of circumcision, while there are pictures of common people who were clearly circumcised. Herodotus thought that the Egyptians practiced this operation

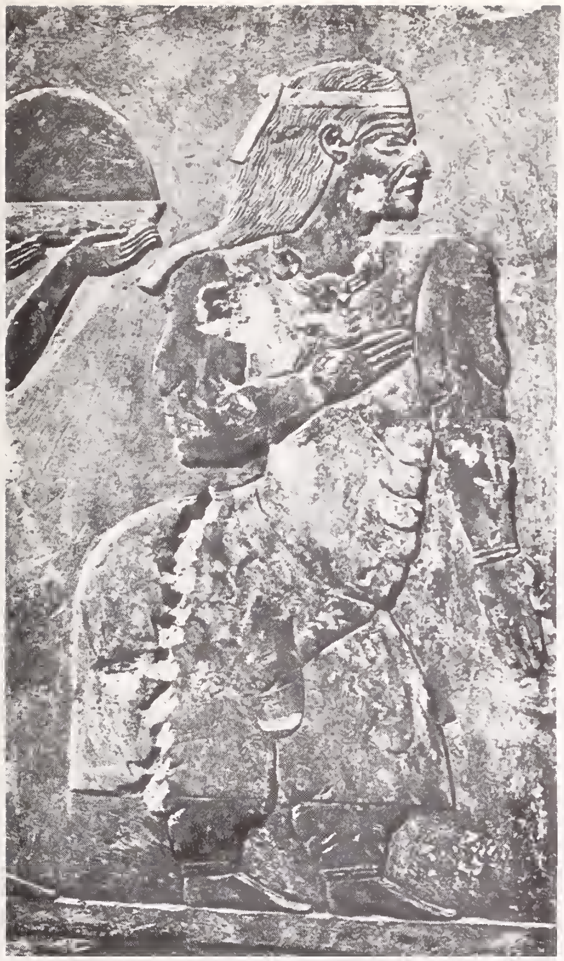

Figure 9

The Queen of Punt. Detail of a bas-relief from Deir-el-Bakri. Cairo Museum.

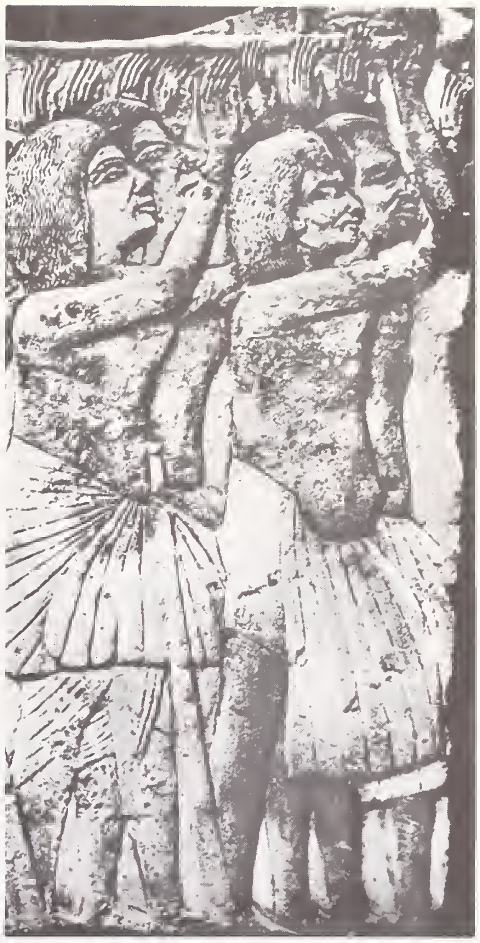

Figure 10

Old Man with Umbilical Hernia. Bas-relief from the tomb of Horembeb, Pharaoh of the XVIII Dynasty. (Brooklyn Museum).

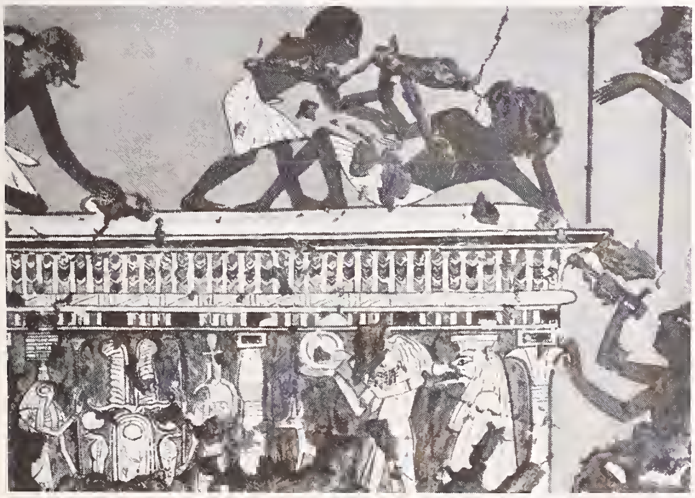

Figure 11

Detail from a wall painting showing a workman with a dislocated shoulder being manipulated. Tomb of the architect Ipuye at Thebes, 13th Century B.C.

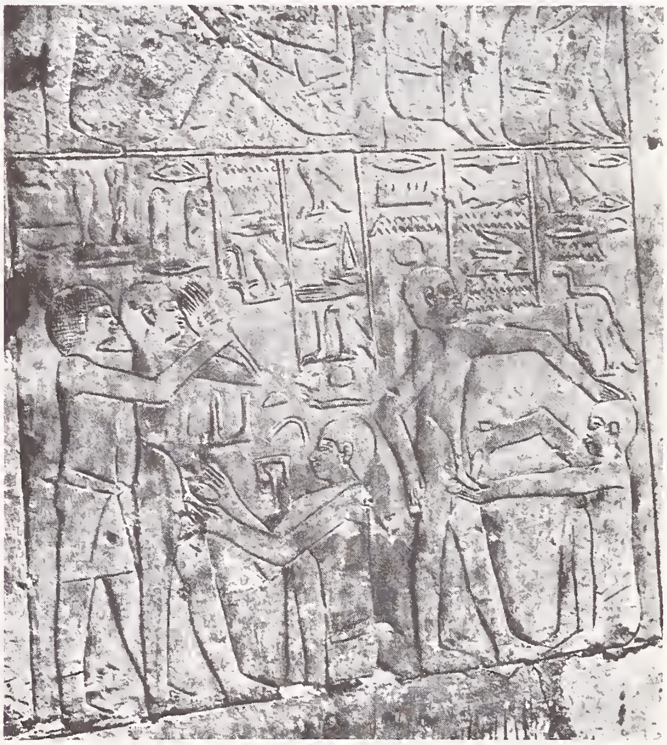

Figure 12

Egyptian Circumcision. From door of tomb found in Sakkara c. 2423-2262 B.C.

for hygienic reasons. He wrote: "They practice circumcision for cleanliness' sake; for they set cleanliness above seemliness." The weight of evidence, however, would imply that it was done for religious purposes. It may be that it was an initiation rite into the cult of the god Re (Ra). An ancient tradition relates that blood fell from the phallus of the god when he performed his own mutilation. Circumcision would therefore be an imitation of the god-mutilation operation. Mutilation practices of various types, done for religious and magical reasons, have roots deep in early man's past and are still practiced among primitive cultures today.

The fact that surgery as an art was practiced, however, we know from the case histories cited in the Edwin Smith Papyrus. It consisted chiefly of wound surgery and surgery on the surface of the body. Examples of such operations were found in another portion of the same relief that depicted the circumcision scene, a detail portraying operations being performed on a man's foot and a man's back (Figure 13).

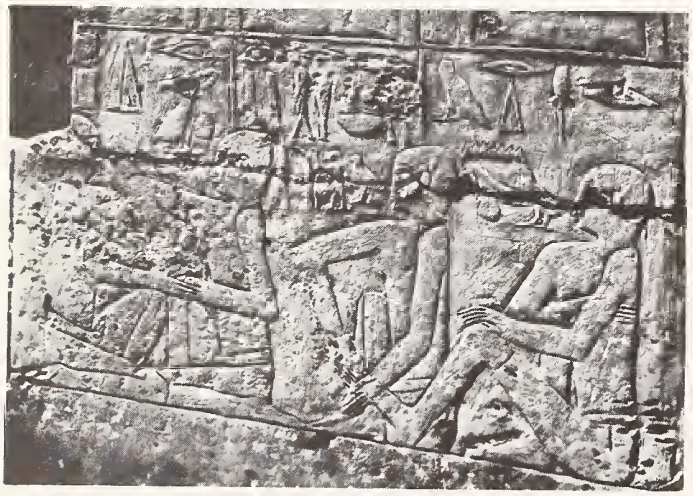

Figure 13
Operating Scene. From a tomb at Sakkara (c. 2500 B.C.).

Blood-letting was probably practiced by the ancient Egyptians. A wall painting in the tomb of the scribe Userhat (Eighteenth Dynasty, 1567-1308 B.C.) portrays the application of a leech to the head of a patient (Figure 14). Blood-letting, in an effort to rid the body of noxious demons or humors, may also have been carried out by sharp instruments. A relief found in a temple begun by Ptolemy VI (181-146 B.C.) displays surgical instruments that could have been used for this and other purposes (Figure 15). A passage in the Ebers Papyrus stating, "Remedy for curing the irft disease: let him be given the knife treatment on the lower leg," further suggests that the Egyptians may have antedated the Greeks with this ancient therapeutic practice.

The use of drugs was at a stage of great complexity among the Egyptians, as can be seen by a perusal of the Ebers Papyrus which is a veritable pharmacopoeia. Many were used for their magical power rather than for specific pharmacological activity, but some have been found medically useful by later investigators. The painted relief found in Akhet-Aton during the reign of King Akhenaton shows Queen Nefertiti offering her husband a plant that in the opinion of several pharmacologists was mandragora or mandrake, widely used during the Middle Ages as a sedative for operations (Figure 16). The resemblance of the plant depicted here to drawings of it in medieval

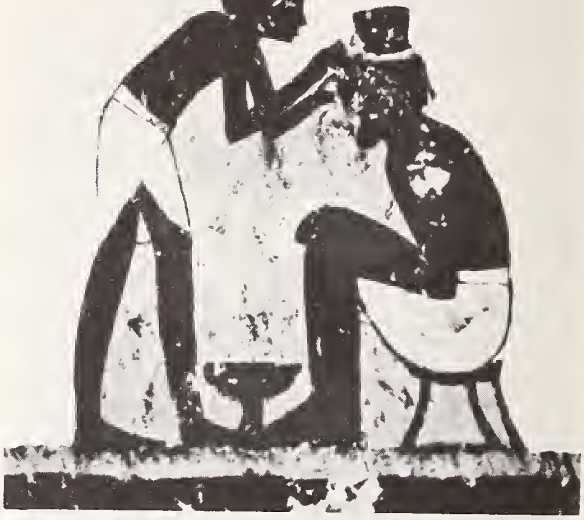

Figure 14
Barber applying a leech to a patient. Detail from a painting in the tomb of Userhat, Thebes.

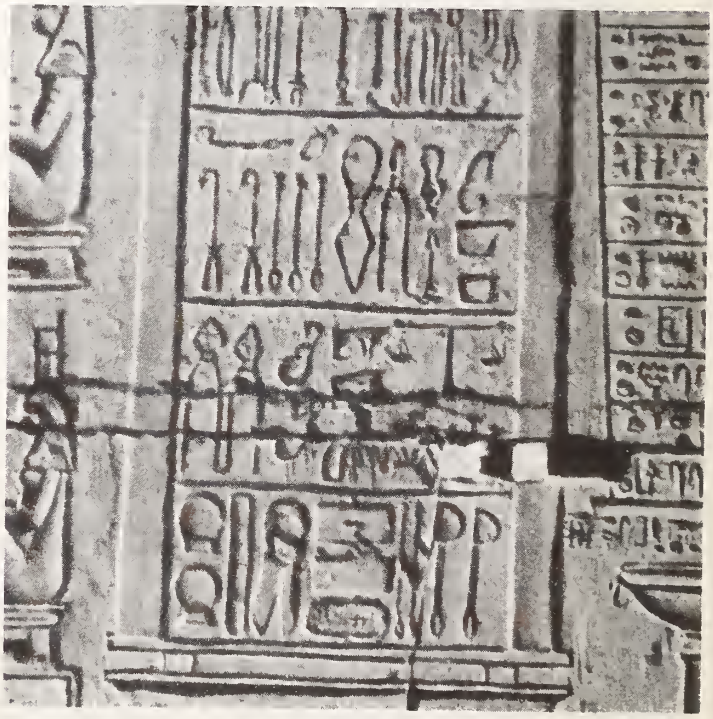

Figure 15
Egyptian Surgical Instruments. Relief, temple of Kom Ombo.

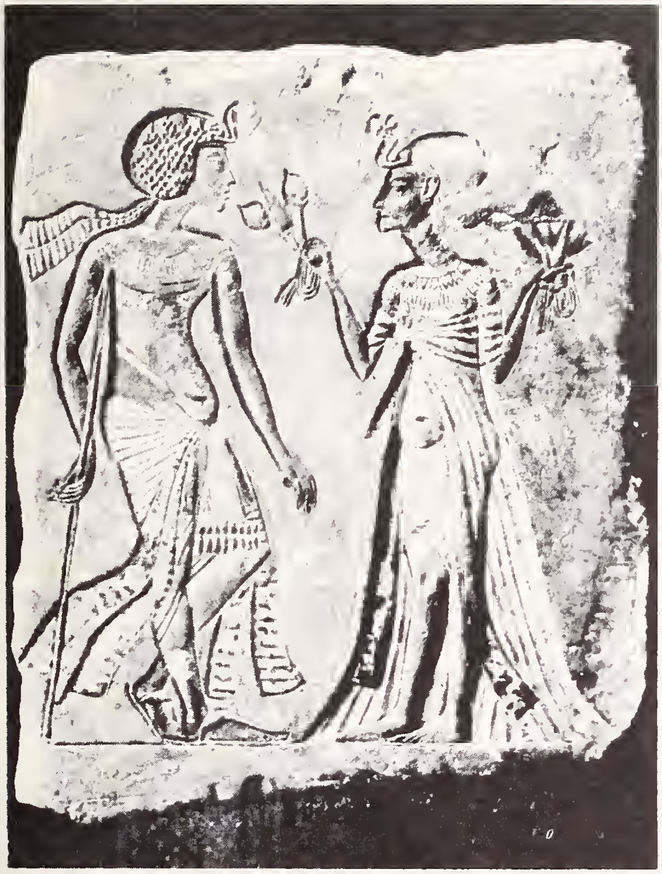

Figure 16

Queen Nefertiti offering mandragora to the Pharaoh Akhenaton Akhenaton. Straatliche Museum, Berlin.

pharmacopoeias is striking. Modern medicine has derived from this plant two drugs which presently occupy a prominent place in the preoperative preparation of patients for surgery—atropine and scopolamine.

One should not in a discussion of Egyptian art and medicine fail to mention Imhotep, royal architect and author of the Step-Pyramid, the forerunner of the later true pyramids (Figure 17). For men of medicine, the name Imhotep has a special appeal, for he was not only an architect, priest, astrologer, and sage, but also a physician of great renown. There are no specific records concerning his medical activities, but they must have been impressive for he later became a demigod and ultimately identified by the Greeks with their god of medicine, Aesculapius. Temples of worship were erected in his honor. The sick and barren came to sleep in them seeking a cure for their afflictions. His present-day popularity stems from Sir William Osler's referral to him as "the first figure of a physician to stand out clearly from the mists of antiquity. For those interested in the subject of medicine and art, he has special appeal also—as a symbol of their interrelationship."

As a final example of our debt to Egyptian art, let us look with our heads cocked to the right and with a little imagination at the winged eye of Horus, as symbolized in a glazed pectoral dating from the Nineteenth Dynasty (Figure 18).

Figure 17

Model reconstruction of the Step-Pyramid at Sakkara by Dr. J. Ph. Lauer. Institut d'Art et d'Archeologie, Paris.

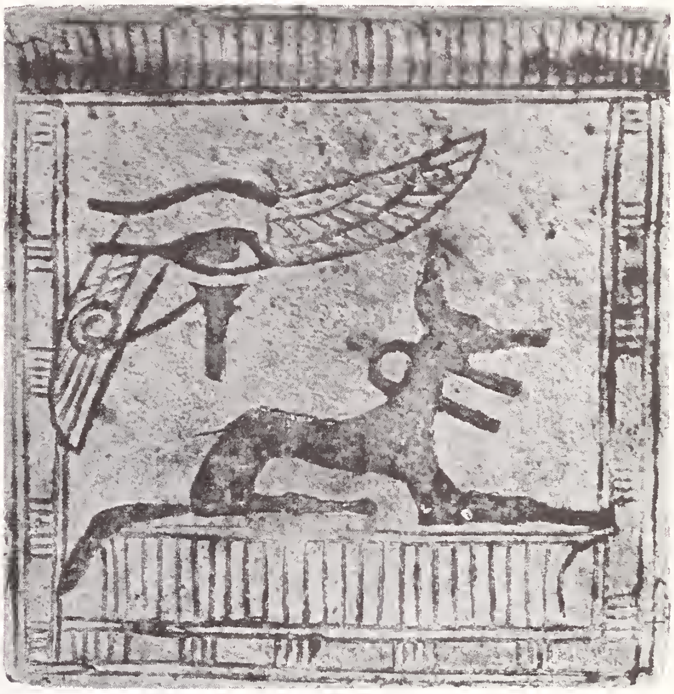

Figure 18

Anubis and Winged Eye of Horus. Glazed composition pectoral. XIXth Dynasty or later, after 1250 B.C. (British Museum).

Horus was a god of health and god of the sun, acknowledged by the Greeks as the prototype of Apollo.

According to mythology, Horus lost an eye while fighting with Seth. The god of wisdom, Thoth, acting as physician, spat upon the wound and restored "the eye to the sun." As time went on this eye or symbol became a common talisman to ward off evil. It was one of the most commonly used amulets throughout Egypt's history. At a later date the symbol was adopted by the Greeks and Arabs. It was also used by the Gnostics of the early Christian church in Egypt. Translators of Ptolemy during the Middle Ages used it as a sign of the planet Jupiter, while medieval alchemists used it to represent the metal, tin. It was written on apothecaries' drug prescriptions in order that this lucky sign might overcome any harmful properties of the medicine. It is still used on present day prescriptions as Rx and can be translated as "Take thou."

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Detail

Medical Ethics, the Art and Science of Medicine

Allen R. Dyer, M.D.

Medicine is facing a crisis of confidence. In such a time, the dominant mood of which is suspicion, not trust, we must seriously question how medicine can continue to exist as a humanistic enterprise. As medical technology becomes more sophisticated, and as medical care becomes more expensive, there are overwhelming pressures to direct medical attention to the physioclinical aspects of disease, rather than to the care of the patient as a whole person.[1,2] Patients justifiably resent such mechanical treatment, and physicians are often subject to harsh criticism for this state of medical affairs. It is illness, however, and not medicine, which is essentially dehumanizing. Medicine, in Dr. Otto Guttentag's excellent definition, "is the *care* of *health* of human beings by human beings."[3]

Paralleling increased sophistication in medical technology is an increased interest in medical ethics. As a discipline unto itself medical ethics is sometimes seen as an area of "expertise" independent of medical care. Recently a young ethicist went onto an orthopedics ward to inquire about ethical problems there. He was informed that there were no ethical problems at that time. He then asked if there were any broken bones and, of course, there were. He reviewed the charts of two patients with similar fractures and discovered that one patient had received Demerol for pain whereas the other had received only Empirin. He noted that the choice of analgesic reflected different attitudes toward pain on the part of the respective houseofficers. He then concluded that these were not medical decisions, they were ethical decisions instead.[4] This example epitomizes the ethical conflict in patient care. It seems hard to imagine that such a distinction could be drawn. Yet this is not just a problem of ethics being left to the philosophers because physicians have abdicated. It is a problem shared by physicians and philosophers and is solved only by reflecting on how it is that we do in fact go about making decisions.

In understanding medicine as an humanistic discipline, I propose a radical look at medical ethics. I mean *radical* in the sense of seeking and endorsing the root assumptions of medical practice rather than the *reactionary* approach of simply criticizing an existing practice.

Medicine is in danger of becoming neurotic about its ethics. I say "neurotic" because the essence of neurosis is unresolved conflict such that by attending alternately to the two horns of a dilemma, one is prevented from acting assuredly or self-confidently. The conflict in medicine is between two traditionally harmonious modes of thought: the art of medicine on the one hand and the science of medicine on the other. Once the art and science of medicine were considered parallel and dually important. But recently "Science" has attained a revered position in our culture opposing all other modes of thought. "Art" has been correspondingly depreciated by those philosophies adjuring strict explicitness. A physician could not function without employing what has been called the art of medicine although he may now be timid about acknowledging its operation.

One feature of the physician's sensibilities is often recognized but seldom appreciated, *viz.* his obsessive-compulsive tendencies. Such meticulousness is adaptive in mastering the complex body of medical information. Such ability to focus on cognitive issues and to isolate affect may be necessary in one's first encounters with death and suffering. However, medical care is sufficiently complicated that neither an adequate fund of information nor a complete data base assures one of being able to make wise decisions.

It is this skill, the ability to make wise decisions, that we must consider. How are these skills acquired in medical education? How does a physician go about making a decision, any decision, and particularly a decision in which there may be genuine ethical conflict? In answering these questions, I would like to contrast two modes of thought: 1) the tradition of clinical judgment, and 2) the model of critical thought.

In the clinical tradition, physicians know more than they can tell and impart much of their wisdom through example. The criteria by which decisions are made can never be completely specified or articulated and thus cannot be imparted in abstract form or as mere information. The physician-in-training must be party to the decision-making process in apprenticeship to someone already skilled in clinical judgment. This is the model of clinical medical education.

In contradistinction to this model are the regnant views of most contemporary philosophy. This framework of critical thought holds that decisions are made after a careful analysis of all conceivable alternatives. These ponderous contingencies are supposedly weighed in balance until a rational decision can be made. All considerations are to be spelled out in exhaustive detail. It has been my experience that such explicitness is never possible when the chips are down. The facts are never all present and indeed never could

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be; it is never possible to articulate exactly the criteria by which a decision is made; or else a gnawing resistance within one's body says "no" when the mind argues "yes."

Much of the literature in medical ethics inclines toward this goal of explicitness as a model for decision-making rather than toward the model of clinical judgment. Indeed it often seems as if ethical judgments are seen in a category different from clinical judgments. Clearly this is absurd. It is the inherent ambiguities of many clinical situations that make us raise ethical questions at all.

Another way of clarifying the problem I am wrestling with is to look at the conflict between the science and the art of medicine as approximating the conflict between the logical and the psychological.[5] When we consider the "logical," we consider acting according to strict rules of inference. When I refer to the "psychological," I am referring to the tacit or unspecifiable factors which are so much a part of ethical decision-making, that is clinical judgment. Questions about the meaning and nature of life, the dignity and worth of man and other such concerns figure heavily in our decision-making even though we can never say just how.

If we accept this bifurcation of the art and science of medicine, we are forced to ask, "Where is ethics to be placed—with the art of medicine or with the science?" Hopefully this will appear to be an absurd question, for such dichotomies themselves are not really meaningful. It makes no sense to talk about "art" and "science" as if they could be discretely separated. "Logical vs. psychological," "fact vs. value," "reasons of the reason vs. reasons of the heart," "mind vs. body," "cognitive vs. affective;" these and other dichotomies are traps that have become part of our cultural baggage and which incline us toward an incapacitating neurosis and threaten to undermine our ethics by abstracting thought from action. Our obsession for logical consistency would render us like Hamlet unable to act wisely in the face of ambiguity, inconsistency or genuine perplexity.

In an alternative view, however, "Science, conceived as understanding nature, seamlessly joins with the humanities, bent on the understanding of man and human greatness."[6] The view I am now speaking of is that of Michael Polanyi in his seminal opus, *Personal Knowledge: Towards a Post-Critical Philosophy.* This view merits consideration not only because it bolsters our mental health against the regnant philosophies which would drive us neurotic, schizoid or even mad, but also because it properly restores ethical responsibility to our personal judgments and actions.

Polanyi's thesis is that knowledge is not objective (nor subjective) but rather is personal in that it relies on the personal commitments of the person holding a particular conviction. In essence, art and science are not dichotomous because science itself relies on art, that is on tacit skills which can never be completely specified or articulated. Polanyi draws many examples from the medical community and from his own experience as a physician and scientist. Indeed the feat of medical diagnosis is in itself an illustrative case for tacit knowing. Logically Polanyi's project is a systematic course in teaching us to accept the personal holding of our own beliefs and convictions, the same beliefs and convictions which are systematically impeached by the totalistic skepticism of our culture.

Polanyi calls his project the fiduciary program because it accredits the personal trust in our own judgment as the paramount arbiter of all our intellectual performances, thus rejecting the credentials of a falsely scientistic objectivism. "Fiduciary" may be understood variously as "trust," "faith," or "confidence." The fiduciary program has dual importance for medical ethics. First of all, in reaccrediting personal skills to make judgments, ethics is properly located in clinical action. Secondly, in affirming trust as a basis for action, Polanyi underscores the traditional basis for medical ethics, namely the fiduciary doctor-patient relationship.

We may now inquire of medical *responsibility:* what are we *responding* to? The answer becomes: we are responding to the trust placed in us by our patients. If our answer does not include this fiduciary support, i.e., if we are not responding to the trust placed in us, the whole enterprise of medicine is called in question and we must seriously wonder if we are acting ethically.

Here a curious thing has happened. In our attempts to radically rethink the basis for medical ethics, we have come upon some very traditional roots, the fiduciary doctor-patient relationship. Insofar as we seek to preserve these traditions, our radical views may be considered properly conservative.

Polanyi formulates his fiduciary program by drawing a distinction between critical thought and post-critical thought. This distinction may be appreciated by considering three phases of the recent history of medicine. For the sake of clarity, I will call these three phases: 1) The Pre-Critical Physician; 2) The Critical Physician; and 3) The Post-Critical Physician. I realize that this is risky, for the divisions do not correspond exactly to reality. Perhaps the three "model" physicians I will sketch are more caricatures of all of us than representations of any one individual. Nonetheless I think it will be helpful to use this device to clarify some of the ethical conflict in patient care.

Stage One. THE PRE-CRITICAL PHYSICIAN was the general practitioner as we fondly remember him. Here the sacred trust, the doctor-patient relationship, was unquestioned. The doctor practiced in the community he lived in and knew his patients personally over generations. Medicine was seen as the alleviation of suffering. Medical knowledge was practical. The physician was skilled in history taking and physical diagnosis. He quickly recognized social factors in illness. Technology had not become so complicated as to render clinical judgment untrustworthy, and the malpractice suit was unheard of. The mistrust necessary for such litigations had not yet developed.

Romantic as this bygone era sounds, there were problems. Hours were long, and time for family was short. Although personal and financial rewards were great, there were frustrations. "Keeping up" with new developments was all but impossible. Often practicing in geographic isolation, the G.P. often lacked access to needed medical referrals. Too few physicians have entered general practice in recent years.

Stage Two. THE CRITICAL PHYSICIAN is the "enlightened" medical scientist. Medicine has now become so complicated that in order to be considered competent, many physicians feel they must specialize in a narrow area and spend a good part of their time in the laboratory lest their knowledge become dated.

Tremendous advances have been made in patient care techniques, but patient care nevertheless has suffered. In the interest of efficiency, the computer and the physician's assistant have begun to relieve the physician of the time-consuming task of being with the patient. During this time public confidence in medicine has begun to erode. The ombudsman has begun to appear in the hospital as someone for patients to tell their troubles to. In North Carolina we often hear folks say that they don't want to be carried to Mr. Duke's hospital 'cause they might get 'sperimented on. Doctors have begun to spend more time with charts than with patients, often for fear of legal reprisal.

Serious indeed is the erosion of public confidence that medicine has suffered, but equally grave is the loss of self-confidence of many physicians who often practice within the confines of what is expected of them rather than what they are committed to. A casual perusal of the chart rack reveals other manifestations of this decline of fiduciary backing. Seldom does one find in medical records personal phrases such as "I believe that . . .", "in my judgment . . .", or even any use of first person pronouns. Instead one finds sentences without subjects or such passive voices as "It was felt that . . .", "It was determined . . .", or "Studies revealed . . .". These are always safe phrases which imply an impossible objectivity as if no one were actually making judgments and no one person could be held responsible. These phrases, which might seem trivial, are in fact devastating clues to the way in which we choose to abstain from our own acts of clinical judgment.

State Three. THE POST-CRITICAL PHYSICIAN is the complete clinician. Patient care is primary, and clinical judgment is the final arbiter of decision-making. The post-critical physician may practice in a medical center or he may make dungareed rounds in Appalachia, but he is his patients' doctor. He is thoroughly trained scientifically and accepts the responsibility for his own decisions, yet he is able to accept his own limitations and ask for consultation when necessary. He is a soloist in a convivial order.

Throughout his medical training, ethical considerations have been integral with clinical concern. He has been encouraged and supported in taking responsibility for patient care. As he passed through the smorgasbord of curricular offerings, he was primary physician to a number of families to whom he attended whenever they needed medical care. He has come to realize that there is a temporal thickness to medical care: part of the patient's life history, especially in chronic disease, coincides with his own life history.

As part of his education he has had sensitivity training to help him be aware of his own feelings. He has come to appreciate that emotional feelings have a somatic sensory input in his own body, and he experiences himself as a somato-psychic unity. He no longer needs to isolate his affect like the obsessive-compulsive physicians of old, but rather he is sensitive to the tacit clues within his own body, his gut-reactions, pains in the neck, etc. Finally he has had consciousness-raising seminars to help him speak univocally in the first person about the convictions he does in fact possess. An old word is revived from the history of the English language to explain this novel situation: the word is "conscience." It is taken to mean acting consistently with one's feelings about what one should do.

Another look at Hamlet may help us understand our own dilemmas. Hamlet's obsessive preoccupations ultimately had consequences more disastrous than any action he might have chosen—had he but chosen to act. Perhaps catastrophe might have been averted had he listened to Rosencrantz and Guildenstern:

Ros: We only know what we're told, and that's little enough. And for all we know it isn't even true.

Guil: For all anyone knows, nothing is. Everything has to be taken on trust; truth is only that which is taken to be true. It's the currency of living. There may be nothing behind it, but that doesn't make

> any difference so long as it is honoured. One acts on assumptions. What do you assume?[7]

This may be a timely challenge for physicians. It might even be therapeutic.

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Checks and Balances Stymie Title XX Confidentiality Threats

Herbert S. Sacks, M.D.

These columns[1-3] have closely followed the threats to privacy and informed consent in the implementation by DHEW of Public Law 93-647,[4] which contains two principal Amendments to the Social Security Act. The first Amendment, Part A, which is Title XX, grants the States the privilege of deciding the mix of services reimbursed at rates of 75% to 90% by the Federal government and places under close watch the determination of eligibility for recipients. On October 1, 1975, more than 10% of the Connecticut population came under the umbrella of Federally supported health and welfare services, an extension of eligibility which reaches deeply into the white middle class for the first time in the history of the Federal welfare statutes. Scrutiny of Title XX activities in Connecticut and other States reveals that the statute is essentially a health measure designed to support child care services, foster care activities, health support services and combinations of services which address the needs of children, the aged, the mentally retarded, the blind, the emotionally disturbed, the physically handicapped, alcoholics and drug addicts and those served by corrections programs.[5] The statute was not identified for what the DHEW knew it to be, an important health measure, replacing expiring Social Security legislation, for fear of engaging interests opposed to the encroachment of the Federal government in the determination of the quality and in the imposition of controls in the health care delivery system.

The legislative history of the bill indicates that Congress intended Title XX to be free of regulatory control of HEW, without burdensome reporting procedures or audits. A careful review of the legislative history has been offered by the Legal Services Title XX Steering Committee[6] and the entire memorandum, of which the history is a part, is the basis of recent legal actions taken against the Secretary of DHEW.

HEW promulgated regulations in June and October 1975 establishing a new data collection system with individual files in each of the States.[7, 8] Further, an unworkable, expensive and humiliating system for determining financial eligibility of clients was to be established. The data file requirement[1] was not related to the verification of the eligibility determination. In Connecticut, the Form W-2000 of the Title XX Administrator of the Department of Social Services requests personal information which far exceeds the Federal requirements, such as Social Security number, ethnic, religious, educational and marital data. Because the State was concerned about accountability to the national government, more than 300 in-State and provider organizations (in Connecticut: the psychiatric clinics for children, Planned Parenthood, Legal Aid and Visiting Nurse services) were under pressure to elicit face sheet data without informed consent and without revealing to the recipient that the provision of the data was optional. If patients were informed that identifying information, a statement of services provided and the State agency involved would become part of a computerized data bank in the State capital, many potential applicants for psychiatric services, health support services, drug and alcohol programs, family planning and legal aid would be dissuaded from seeking help, given the lack of safeguards in the State confidentiality laws. Data inclusive of those accrued in past Federal programs such as Title IVA (AFDC), Title XIX (Medicaid), Title XVI (Supplementary Security Income for the aged and blind) and Title IVB (Child Welfare Services), and unemployment security quarterly wage reports are available for cross-matching and integration into the data banks. This procedure is consonant with Title XX Law,[9] the regulations,[10] and other confidentiality safeguards in the public welfare sector cited in the Federal Register[11, 12] which allow data-sharing by State agencies for administrative purposes in accord with that State's confidentiality statutes. Those statutes have been ineffective, weak and unenforced.

Not only can the citizen's personal data be shared within the State but the Title IVD Statute, Part B of Public Law 93-647, the second Amendment, designed to enforce support obligations owed by absent parents to their children, locating absent parents, establishing paternity and obtaining child support, is a window through which Title IVA (AFDC) and Title XX collected data can be exchanged between the States. Inadequate Federal and State statutes and regulations thusly condone the ultimate establishment of a national welfare and health data bank cutting across all jurisdictions.

The meaning of the egregious set of regulations promulgated by DHEW for the Title XX Amendment gradually became the focus of a poorly organized national campaign, but a campaign which in its component parts has been remarkably successful to date.

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On a national level, the Social Services Coalition, a group of more than 35 organizations comprising the League of Women Voters, the National Council of Churches, labor unions, senior citizens groups, minority organizations, the Governor's Conference, and health associations analyzed the data and began a rataplan of complaints and recommendations addressed to the Congress and DHEW. The American Academy of Child Psychiatry, and the American Psychiatric Association vigorously pursued its own strategies supporting its arguments with incident reports and clinical examples. By February 1976, a vast amount of organizational time at DHEW in the Social and Rehabilitation Service and the Office of the Secretary was consumed in responding to Congressional queries and in sponsoring small meetings to deal with representatives of major national groups. The Congressional delegation from Connecticut conducted itself with elan and adroitness in its pursuit of DHEW regulation revisions.

Within the State, in December 1975, the Connecticut Psychiatric Society organized and led a Coalition for a Fair Information Practices Act.[13] Here was an opportunity for Connecticut physicians to provide support and leadership in a matter which affected us directly as citizens and professionals. "An Act Concerning Confidentiality of Personal Data," (C.B. 597) P.A. 76-421 was unanimously passed by the General Assembly and signed into law by Governor Ella Grasso on June 9, 1976. This State Privacy Act, which incorporates the features of the Federal Privacy Act of 1974,[14] is the seventh law of its kind passed in the nation, Virginia and Ohio enacting privacy statutes during our legislative deliberations. In its essentials, P.A. 76-421 educates State employees about the provisions of this Act and Federal statutes concerning maintenance and disclosure of personal data kept by the State agency; establishes a complete record of who has had access to personal records and the reasons; makes available to the citizen his personal data with the right to contest its accuracy, and to correct the data with agency concurrence or add a statement to his record if concurrence is not gained. If the agency determines that disclosure of medical, psychiatric or psychological data is detrimental to the citizen it can withhold the data and inform the citizen that he has 30 days to seek judicial relief at the Court of Common Pleas. Further, the agencies must describe the nature and purpose of their data collecting, the categories of data collected, the uses of the data and procedures regarding maintenance (security) of the data. There are civil penalties for violation by agencies. The effective date of the Act is July 1, 1977.

The principal support for this statute came from Sen. David Neiditz, Chairman of the Senate Judiciary Committee, Senate Majority Leader Joseph Lieberman and Chairman of the House Judiciary Committee Rep. James Healey. Without their enthusiastic backing, consideration of this legislation might have been deferred for a year or more.

While P.A. 76-421 markedly diminishes the confidentiality threats posed by Title XX in Connecticut, there is still substantial area for leakage which we expect will be plugged by changes in the Federal regulations. During this State-level legislative campaign which has resulted in the only economical and administrable State statute of the seven cited, a judicial thrust was directed at the Title XX regulations by legal services and American Civil Liberties Union attorneys in The Connection, Inc. v. Mathews[16] pending in the New Haven Federal Court and in Pennsylvania v. Mathews[17] filed in the District of Columbia Federal Court. The States of Maryland and Massachusetts have joined the Pennsylvania challenge, and Title XX Administrators in New York and Georgia have also objected to the regulations.[18] The challenges claim that Title XX violates the mandate of Congress, imposes costly new administrative burdens and violates the Privacy Act of 1974.

The pressures of burgeoning State legislative actions, Congressional inquiries on a State and national level and the impending legal challenges led to a Federal regulation change on April 2, 1976.[19] The DHEW retreat of April 2 deleted the penalty for a perjury requirement on the face sheet (W-2000 in Connecticut) which required a signature and a pledge, and substitutes a certification by the applicant that information which he submits to establish his eligibility is correct. Further, it relieves the provider of the burden of verifying eligibility and removes the provider from the surveillance role. Placing the responsibility for monitoring eligibility on the State now allows direct negotiation with the State Title XX Administrator regarding reporting requirements and written contracts. Prior to this regulation, the State blamed the Federal regulations for its inability to negotiate freely and the Feds claimed that the State people were overly zealous in their interpretation of the Social Science Reporting Requirements (SSRR).

In April then, the provider could determine eligibility but the State had the authority and the full responsibility to monitor eligibility. The provider could send to the State coded reports for statistical purposes, enabling the State to account to the HEW functionaries by aggregate categories. However, the Connecticut Title XX Administrator requested a coding system which included the first three letters of the last name, the first initial of the first name and the birth date. Independent experts pointed out that unequivocal citizen identification would be a simple matter for the

State computerized data bank with these identifiers. Obviously, to insure confidentiality, only the provider should possess the code.

In anticipation of The Connection, Inc. v. Mathews which was to be heard in New Haven on June 9, on May 19 a major Federal regulation change was announced.[20] DHEW revoked its basic data file requirement! The attorneys representing the plaintiffs,[21] The Connection, Inc., met with the Connecticut Title XX Administrator, who averred that the file was still requisite in order to satisfy the Social Science Reporting Requirements (SSRR) which are still extant in their 80 pages of detail. The SSRR are implied in 45 CFR 228.17 "Reports and Maintenance of Records."[22] The initial provisions were described in a Letter of Transmittal which has administrative power in DHEW, but unlike regulations, are not subject to public comment and review.[23] The Connecticut Administrator states that the data file will assure an unduplicated accounting of services rendered Title XX recipients if they utilize more than one provider. Secondly, the data system is needed to assure DHEW that 50% of the funds go to Title IVA, Title XVI or Title XIX recipients. Without the data bank the Administrator could not match Title XX applicants with the taped records of Title XIX recipients. Thirdly, the data bank is needed for planning purposes. In Connecticut, the computerized data bank will be operational on June 15, 1976.

In fact, the State does not want to comply with the SSRR but it must protect its position vis-a-vis the Federal reimbursement pending judicial review. Sampling techniques can replace detailed matching of records for purposes of accountability. Aggregate reporting of data, with coding at the periphery, is all that Congress required. Spot auditing of generators of data in the periphery by Federal people or State monitors is a valid methodologic approach.

Negotiations between the lawyers for the plaintiffs, The Connection and Michio Suzuki, Deputy Commissioner, Community Services Administration, Social and Rehabilitation Service, DHEW, will occur by the second week of June in order to resolve the remaining aspects of the case.

The fight is far from being over, but the outcome appears to be on the side of those who cherish citizens' rights and wish to see them appropriately balanced against the government's right to know. As physicians, we are proud of our continuing leadership role in a battle where we are not seen by the American public or by our organizational allies as self-serving or economically motivated.

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Thomas Hood, *The Last Man*

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Titles of Hospital Administrators

George R. Wren, Ph.D. and Sharon M. Hilgers

A study of the "corporate" trend in titles of hospital administrators.

In recent years, the changing titles of hospital administrators and the significance of these changes has had considerable attention in the hospital literature. Everett Johnson[1] states that in the late 19th century, the chief full-time executive officer of a hospital was a nurse. In the 1920's and 1930's, the function of the hospital's chief executive officer became more business-oriented and the common title was superintendent. In the 1950's, the job title changed to administrator and variations of that title.

In the 1960's, Johnson points out that the job of administrator in larger hospitals began to take on two aspects—one being the responsibility for the administration of the internal operations of the hospital and the other being the responsibility for the hospital's external relations. In the 1960's, therefore, the use of titles such as executive vice-president represented a desire of the boards of trustees to have the chief executive officer of their hospital function both as the director of hospital activities and as a health leader in the public arena.

Johnson states that a job title should not be used for ego satisfaction—the major importance of a job title is to project the status of the position to outside people. He says that as the hospital administrator moves into the larger field of community health responsibilities, his job title becomes increasingly useful to people unfamiliar with hospital operations as it assists them to properly identify his organizational role.

Johnson concludes that the next logical evolutionary step in hospital administrators' job titles would be the title president, with the present position of president of the board of trustees being changed to chairman of the board of trustees. Johnson says that the use of the executive vice-president title and concept represents incomplete development of the job title of the hospital administrator as a reflection of the job role and the organization of the hospital.

Richard L. Johnson[2] reviews the evolutionary role of the executive head of the hospital from superintendent to hospital administrator to executive director to executive vice-president to president. He says that such a shift has not occurred for prestige reasons but rather because of the changing nature of the role of the hospital's chief executive. He states that even though the title of president is still a rarity in hospitals, it is gaining acceptance rapidly and can be expected to be in widespread use within a few years.

Even as early as 1966, Letourneau and Letourneau[3] wrote, "He is now known as a hospital administrator, but as the hospital gradually assumes the appearance and characteristics of a business, he may soon be known as the hospital president like his counterpart in industry."

The Meaning and Functions of Titles

A number of other authors have considered the meaning and functions of the title used for the hospital chief executive officer. Steinle[4] writes that "designation of the hospital administrator as executive director or executive vice-president appears to be an excellent means of adding to top organization leadership."

Hague[5] says that the title of president is nice enough but if it is conferred just to keep up with the times or in lieu of a salary increase it really isn't much. If the board of trustees wants to make their administrator the president, then they should give him the title of president but not otherwise. More important than the title is the fact that the hospital administrator should function as the hospital's chief executive officer, carrying out policies established by the governing board. He is and should be at the heart of the hospital's governing board.

Witt[6] warns that the title of administrator has been so overused in the health field that it can be accepted only with the close analysis of what the administrator administrates. He suggests that, regardless of its title, the hospital administrator's job must be in line with the following questions: Does the title convey precisely and clearly what the person is to do and what he will be responsible for? Does the title convey staff or line authority? Are the titles consistent with the organization?

Ewell[7] states that while more descriptive titles for hospital administrators are necessary, it is more important that the hospitals top man be designated (and recognized by the board of trustees and the medical staff) as the chief executive officer of the entire hospital and completely responsible for all aspects of its operation. If this is the case, then the chief hospital executive will be further aided by a title that suggests top management leadership, and, of course, the most frequently used title for chief executives of industrial corporations is president.

The Corporate Title Trend

This quoted literature, which comprises the most significant articles published since 1966 on the subject of hospital administrator's titles, assumes a trend toward the use of corporate titles (especially executive vice-president and president). None of the aforementioned research articles is based on factual data. They are conjectural and philosophic based on certain assumptions. It was to test some of those assumptions by collecting and analyzing facts that this research project was started in 1970.

However, in the September 1, 1971 issue of *Hospitals,* Todd[8] published the results of a study examining the change of 17 hospitals to a corporate type of organization and management. Utilizing interviews and questionnaires, his study sought information on the reasons for the hospital's decision to adopt the corporate organizational structure; the impact of the new structure on the governing board and the administration's relationship with the medical staff; the values and capabilities of the new corporate structure; and its probable effect on the future of the hospital system. Also, information was sought regarding the exact role of the chief executive in this structure and his relationship to the governing board, as well as information concerning role definition of the immediate subordinate level of management.

The Case for the Title "President"

In addition to collecting information on those subjects, Todd gives some consideration to the choice of title for the administrator. He agrees with Everett Johnson that the use of the executive vice-president concept represents an incomplete development of a hospital's corporate organizational structure. He further feels that specific use of the term president for the hospital's chief executive officer seems to be the most appropriate designation.

Finally, Todd writes: "The corporate form of management is accomplishing its designed task and has provided a hope and a challenge for the executives operating within it. It can be concluded that this organizational structure will proliferate among our health institutions, providing a new direction in which to achieve the larger, more complex objectives of the future of health care." This seems a rather sweeping conclusion based on a study of 17 hospitals and perhaps may be more conjecture than bona fide study conclusions.

Kauffman[9] wrote his Master's research project for the Graduate Program in Hospital Administration at Xavier University, Cincinnati, on the subject of the changing role and changing title of hospital administrators. Most of this thesis consisted of an historical background, literature quotations and conjecture. However, he did have a small research section in which he sent out a questionnaire with six questions to 72 non-profit hospitals in the Delaware Valley Hospital Council of the Hospital Association of Pennsylvania. He received a 75 percent return. The answers to his six questions were as follows:

(1) "Are you presently or in the future planning a title change?" Seventy-five percent answered "yes." (2) "If your title has been changed, indicate approximate date." Twelve percent said their title had been changed, and the time span was three months to four years previous. (3) "Do you feel the title change will be an aid in fulfilling your duties and responsibilities more effectively?" Sixty-four percent answered "yes" to this leading question. (4) "Do you feel this change in title will affect your working relationship with employees, medical staff, governing board, and community?" Towards employees, 22 percent answered "yes"; medical staff and governing board, 72 percent "yes"; and community, 65 percent "yes." (5) "Do you foresee any future organizational and/or operational complications in the hospital because of this change?" Ninety-three percent answered "no."

(6) "Additional comments." Additional comments were such as, "The key is not in the title change, but in a corresponding change in responsibilities." "Although the change may not be important to the hospital family, it would be significant to the community and others outside of the immediate hospital family." "Hospitals should adopt corporation management philosophy and so structure the entire organization." "To change titles only because it happens to be the current vogue is meaningless."

Changing Roles and Titles

Kauffman wrote that most respondents who opposed title change for the administrator argued that the title was merely a change in semantics and/or that their current title was sufficient to meet the needs of their particular institution. Kauffman also noted that college-owned hospitals opposed a title change to president because of the potential confusion with their organizational designation of president for the head of college or university.

In conclusion, Kauffman states that "This study appears to indicate that the trend in title change is becoming evident in the majority of hospitals and that hospital administrators believe that the corresponding corporate structure is necessary for their continued function in future growth."

Ayers[10] conducted a mail questionnaire survey of 76 hospitals asking certain questions concerning corporate titles and corporate organization of hospitals. He received 50 replies for a 66 percent return (some respondents did not answer all questions) with results of this research as follows:

(1) "When did your hospital begin using the title of president?" Between 1961 and 1962: one each; 1965, 1966, and 1967: two each; 1968: none; 1969: eight; 1970: fifteen; 1971: eight. (2) "Is the president a full-fledged member of the board of trustees with voting rights?" Yes—25; No—22. (3) "Why did your board adopt this title and form of structure?" Answers ranged from those who believed the corporate form of management was the most effective, and that the title of president was consistent with that form, to those who cited reasons of prestige or trend-following. Furthermore, it was apparent that some respondents didn't seem to understand the corporate concept of management.

Establishing the Change

(4) "What problems did you incur in persuading the board of trustees to adopt this form and title?" Forty-one encountered no resistance; two encountered some resistance from the medical staff; and only one encountered some resistance from the board. (5) "What problems did you incur as a result of adopting this form of structure?" Thirty-one answered "none"; two reported some reservations by the medical staff; two had problems communicating the title change to the public; one said it necessitated some internal adjustments; and one respondent stated that other hospitals sometimes had difficulty understanding the new title. (6) "Have you incurred any legal situations as a result of this change?" Forty-five respondents answered "no," and five did not answer this question. (7) "Was the transition done rapidly or over an extended period of time (rapidly meaning three months or less)?" Thirty-seven answered "rapidly"; five indicated the transition was made over an extended period of time.

Ayers concludes by stating that although the number of hospitals adopting the title of president for their chief executive officer is increasing, the absolute number of hospitals which have made such title change is very small—approximately 1 percent. However, for non-governmental, non-profit hospitals of 500 beds and over, 13.5 percent of that group's title for their chief executive is president.

Research Design

In conducting the research which led to this article, two types of titles for hospital administrators were defined: (1) administrative titles, which included superintendent, administrator, or director; (2) executive titles, which included president, executive vice-president, executive director, executive officer or executive administrator.

The 1960 *Guide Issue of Hospitals*, J.A.H.A. listed 6,876 hospitals. Of these, 130 administrators had an executive title, while all the others had an administrative title.

The 1970 *Guide Issue of Hospitals*, J.A.H.A. listed 7,123 hospitals of which 326 had an executive title for its chief executive officer. Sixty-one hospitals that had an executive title listed in 1960 still called its administrator by an executive title in 1970. In addition, 265 other hospitals had changed during those ten years from an administrative title to an executive title. However, 69 hospitals had changed back from an executive title in 1960 to an administrative title in 1970.

A questionnaire was sent to the 265 hospitals which had changed from an administrative to an executive title from 1960 to 1970. One hundred eighty of these questionnaires were returned in usable form, a 68 percent rate of return. The results of this questionnaire will be given later in this research report.

A control group of hospitals that had not changed from an administrative title from 1960 to 1970 was also chosen. That is, these hospitals had an administrative title in 1960 and an administrative title in 1970. One hundred sixty returns were received for a 73 percent rate of return. Results of the questionnaires for this control group will be given later in this research report.

Those sixty-nine hospitals which had an executive title in 1960 and an administrative title in 1970 were also contacted by questionnaire. Fifty-two usable replies were received for an 80 percent return. The results of this questionnaire are also given later in this research report.

Hospitals Which Changed to Executive Titles

A questionnaire, which contained the following five questions, was sent to the 265 hospitals which had changed from an administrative title in 1960 to an executive title in 1970. The 180 that replied represented a 68 percent rate of return.

(1) "In what year did your hospital's chief executive title change to its present name as listed in the August, 1970, *Guide Issue of Hospitals*?" One hundred sixty-six hospitals answered this question as follows: 1960 through 1965: 22; 1966: 8; 1967: 20; 1968: 32; 1969: 50; 1970: 34. (2) "What was the title which immediately preceded the present title?" Only one of the 180 questionnaires returned did not give an answer to this question. (That single respondent wrote that he did not know.) Of the 179 answers to this question, 65 percent said the previous title was administrator; 15 percent said director; 7 percent said superintendent while the other 13 percent mentioned various other titles defined as administrative.

(3) "Why was the title changed?" This, and all other questions in this questionnaire, was asked as an open-ended question. Therefore, the answers varied. Two

hundred fifty-eight responses were received on the 180 questionnaires because some respondents gave more than one answer. These were classified as follows: 71 respondents felt the new title more adequately described the position; 39 indicated that it resulted from a change in the organization (not necessarily to corporate form); 34 indicated that it resulted from a change in the organization to a corporate form; 33 said it was directly related to increased responsibility of the hospital administrator; 19 said that it was suggested by the board of trustees; 17 agreed that "it's a trend—everyone else is changing"; 15 thought the public related to it more easily; 11 indicated that a new man assumed the job who wanted an executive title; ten said the change was made when the hospital administrator became a member of the board of trustees; four felt this change in title would be politically expedient; three said that it was suggested by a consultant; and two said that it was suggested by the administrator himself.

(4) Do you think this present title describes the position? One hundred fifty of the total 180 returns answered "yes" to this question. This is compiled as follows, related to the specific present executive title. Of those headed by an executive director, 85 respondents said "yes," 22 said "no"; of those headed by an executive vice-president, 32 said "yes," eight said "no"; of those headed by a president, 32 said "yes," zero "no's"; of those headed by an executive officer, one said "yes," zero "no's."

(5) We would appreciate any other comments you wish to make on this subject. The answers to this question and the open-ended "remarks" in (4) elicited comments from most of the respondents. The general trend of most of the comments made was that the job of hospital administrator has changed and is changing, and that this should be acknowledged by changes to executive job titles. Moreover, they indicated that changes in job titles are meaningless unless the job content and role is consistent with the executive title. Further, that it is important that the job title of the hospital administrator be one which correctly reflects his job and role to the community at large, where he is spending an increasing amount of his activities. There were no criticisms of the concept of changing the hospital administrator's job title to an executive type designation.

Hospitals Whose Title Designation Remained Administrative

The intent here was to obtain a control group of hospitals which had not changed to an executive title between 1960 and 1970 and to find out why not. For each of the 265 hospitals in the group which had changed from an administrative title to an executive title, an attempt was made to select, from the 1970 *Guide Issue of Hospitals,* J.A.H.A., a matching hospital as regards geographic location, size, and services. In some cases, it was not possible to find a matching hospital. Two hundred nineteen such matching hospitals thus constituted the control sample and were sent a questionnaire. One hundred sixty usable questionnaires were returned for a 73 percent rate of return.

After a brief explanatory statement of the purpose of this project, the following four questions were asked and these results obtained: (1) "Do you have any plans to change the title of the chief executive of your hospital in the near future?" Of the 160 answers to this question, 48 were "yes" and 112 "no." (Of the 48 "yes" answers, 13 wrote that they had already made the change during the approximate 18 month interval between this research project and their hospital data being sent to the American Hospital Association for inclusion in the August, 1970, *Guide Issue of Hospitals,* J.A.H.A.)

Those remarks from the 48 "yes" answers were essentially the same as those given by hospitals which had changed to an executive title between 1960 and 1970, as reported in the previous section of this research report.

Some Opposition to Change

More interesting were remarks made by the 112 who gave a "no" answer and said they had no intention of changing from an administrative to an executive title. However, most of these remarks mirrored the answer to the next question and will, therefore, be reported there.

(2) "Why hasn't your hospital changed the title of its administrator?" This was an open-ended question and, therefore, the answers varied and were classified as follows: 64 believed it was not necessary to change; 23 had never considered it; 13 said that the title had already been changed; seven believed that titles were not important; five answered that traditions at the hospital prevented such a change; five said that they might change in the future; three said that the change might be made when the hospital became larger; and three answered that making such a change was not an administrative decision.

Opposition, or anticipated opposition, to a title change by boards of trustees and/or medical staffs was mentioned consistently by respondents in this section who, therefore, considered chances for such a change as highly unlikely.

(3) "Do you think this present title adequately describes the hospital administrator's position at your hospital?" One hundred eight respondents said that they thought their present administrative title was adequate in describing their position. Fifty-two

(approximately one-third) felt that their present administrative title did not adequately describe their position. These 52 respondents generally indicated that their job role now more nearly approached the functions of the president of an industry or business and that the public would relate better to a comparable title in the health field.

(4) "We would appreciate any other comments you wish to make on this subject." There were relatively few comments written in this section of the questionnaire. Apparently, there was adequate opportunity for expression of views in the open-ended sections of the previous three questions in the questionnaire. Those few comments made in this section of the questionnaire were similar to those made in the open-ended parts of the first three questions.

Hospitals Which Changed to Administrative Titles

For those 69 hospitals which had changed from an executive title in 1960 to an administrative title in 1970, therefore apparently reversing the trend toward hospital administrators receiving executive titles, a questionnaire also was sent out. Fifty-two were returned, for a 74 percent return. The question and replies were as follows:

(1) "Does your hospital have both an executive officer and a hospital administrator?" Twenty answered "yes" and 27 "no." (2) "If the answer to the preceding question is yes, please answer the following questions: What is the title of the hospital's executive officer?" Six said executive director; for said president; three, executive vice-president; three, president of the board of trustees; and four mentioned other executive titles. "What is the title of the hospital administrator?" Sixteen said administrator; two, superintendent; one, director; and one, director and superintendent.

(3) "If the answer to question (1) above was no, please answer the following questions: What is the current title of your hospital administrator?" Twenty said "Administrator"; three, "Director"; three, "President and administrator"; one said "Director of administration." "Do you think this present title describes the position?" Twenty thought it did, four did not. "In what year did your hospital administrator's title change to its present name?" Only ten hospitals knew the answer to this—it was one per year from 1960 to 1970. "What was the title which immediately preceded the present title?" Only 13 hospitals knew the answer to this, and their answers were varied and insignificant. "Why was the title changed?" Two said it was more appropriate and reflected the function better. Three said it resulted from change in hospital ownership. Two said that the change in title was made when they employed a trained administrator. There was one each of the following reasons—change from R.N. to lay administrator; change of administrator; the administrator was elected president of the corporation.

(4) "We would appreciate any other comments you might wish to make on this subject." There were only a few answers to this open-ended question. Those who did respond expressed the opinion that the title of the position is of no consequence as long as the job functions are understood by everyone.

Some Respondents Contradict Trend

The 69 hospitals included in this part of this research study were primarily small, specialized, and/or proprietary hospitals. A few large hospitals included in the 69 actually did not change from an executive title in 1960 to an administrative title in 1970. Rather, the hospital administrator had an executive title in 1960 and was listed in the *Guide Issue of Hospitals,* J.A.H.A. for that year as the hospital administrator. In 1970, he had moved to a corporate level with the same or another executive title. The hospital employed another administrator to be in charge of the internal administration of the hospital and had given him an administrative title, reporting him as the hospital's administrator for the 1970 *Guide Issue of Hospitals,* J.A.H.A.

Although there were ostensibly 69 hospitals which changed from an executive title in 1960 to an administrative title in 1970, that number was not significant either because the changes, in fact, were not made, the hospitals were very small and, therefore, atypical, or the change in title resulted often from a change of specific administrator. Therefore, it can be concluded that these 69 hospitals do not represent any negation of the trend toward an increasing number of hospitals using an executive instead of an administrative title for their chief executive officer.

One of the respondents to one of the questionnaires wrote the following in a remarks section—"What does all this prove?" This seems like a reasonable question from any respondent who is being asked to give of his time and thoughts. The following conclusions constitute an answer to that question.

Conclusions

Is there a "trend" in the change of titles of hospital administrators and if so, what is the trend? In 1960, there were 130 hospitals which used an executive title for their administrator out of a total of 6,876 hospitals listed in the *Guide Issue of Hospitals,* J.A.H.A. In the 1970 *Guide Issue of Hospitals,* J.A.H.A. there were 326 hospitals out of a total of 7,123 with executive titles. Sixty-nine had apparently gone from executive to administrative titles in those ten years, but 265 had gone from administrative to executive titles during that period. As described previously, either the change to administrative titles from 1960 to 1970 in those 69 hospitals was due to the separation of the administrator's job into two jobs (one with an executive title and one with an administrative title), or these hospitals were small, specialized and/or proprietary and, therefore, of no real significance in the overall trend.

Whether this increase of 265 hospitals changing from an administrative to an executive title from 1960 to 1970, or the fact that a total of 326 hospitals had executive titles for their administrators in 1970 out of a total 7,123 hospitals listed in the *Guide Issue* for that year, represents a trend or not depends on the definition of the word "trend." There was a 2.7 percent increase in the number of hospitals having such executive titles for their chief executive officer from 1960 to 1970. In 1970, 4.6 percent of the 7,123 hospitals had administrators with executive titles.

Is there really any significance in hospital administrator job titles? The authors cited in the first section of this research report, as well as many remarks made on questionnaires sent out during this study, indicate that there is a significance to the job title of the hospital administrator, but only if his job title is related to and correctly describes his job role and job functions.

But if the change in job title is only sought by the administrator or hospital because of what they think is a trend—to "keep up with the Joneses" or to enhance the status of the administrator instead of actually reflecting an increase in responsibility, level, and importance of the administrator's job—then not only is that effort doomed to failure, but it can even backfire on those making or recommending the change.[11]

What should be the title of the chief executive officer of the hospital? The title is actually relatively unimportant to those who are closely associated with the hospital. Everyone in the hospital family knows the administrator's role and authority regardless of what job title he has. As a matter of fact, it is very interesting to note how many administrators who have executive titles (executive director, executive vice-president, president) are still referred to as administrator by trustees, physicians, hospital personnel and others related to the hospital—especially if their job role and function is primarily that of internal administration.

Titles Should Describe Job to Community

Therefore, the major (perhaps the only) importance of the job title is that of describing the job to those individuals in the community who are not intimately associated with the hospital. Because of the commonly known model of business organization, the title president clearly describes the job of the hospital administrator to members of the general public and community.

In that regard, all of the executive and corporate titles which indicate that the hospital administrator is something less than the top man in the organization fail to communicate his position to the patients, relatives, visitors and the general public. The title of executive vice-president indicates that there is someone higher (that is, a president), and that the executive vice-president is in truth an assistant to the top man in charge of the hospital. The job title of administrator is far preferable to that of executive vice-president in communicating to the general public the identity of the chief executive of the hospital. Of course, the title president is the best of all.

In ending this article, may we thank Robert Hill, Alfred Joseph, John Kinney, Robert Letson, and Jon Trezona, MHA students at Georgia State University, who did the initial work on this project,[12] and the many hospital administrators and others who completed the questionnaires which yielded the data for this study.

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11. For example, several years ago one of the authors observed a certain hospital which had a long range plan/role study done. One of the consultant's recommendations was that the administrator's title and role be upgraded from administrator to president. Further, that the president of the Board of Trustees become the chairman of the Board of Trustees; that the administrator be made a member of the Board of Trustees; and that the assistant administrators, the controller, and the director of nursing be given the titles of vice-presidents.

The Board of Trustees accepted two of those four recommendations. The administrator was given the title of president and the assistant administrator, controller, and director of nursing were given the titles of vice-presidents. However, the Board of Trustees decided that the administrator would not become a member of the Board of Trustees and, furthermore, that the president of the Board of Trustees would retain that title.

The new president and vice-president titles were announced in the local newspaper and in the hospital newspaper. New name plates appeared on their desks and on their doors. Their new titles appeared on their stationery.

However, at the same time, others of the hospital personnel informally promoted themselves, or were promoted by their fellow-workers, to vice-presidential status. Nurse aids, orderlies, porters and others were seen around the hospital with hand-lettered name tags instead of their usual plastic name tags. The new name tags had such titles as "vice-president of mopping the floors"—or "vice-president of bedpans on Main Two"—or "vice-president of pots and pans." Almost every head nurse found that the name plate on her desk had been replaced by a hand-lettered cardboard plate, with such titles as "vice-president of Main Three" or "vice-president of Central Service." Few of the head nurses bothered to remove those cards.

Employees, doctors, and even trustees were pointedly addressing the administrator as "Mr. President"—and other people as "Mr.", "Mrs." or "Miss vice-president." Everyone in the hospital was laughing and so were many people in the community.

In other words, everyone knew that the job roles and job functions of the various people had not changed. The prestige and authority of the top administrators of the hospital were damaged. It is interesting to note that when the administrator resigned some time later and a new administrator was employed, the Board of Trustees specifically stated that he would come in with the title of administrator, at which time all of the vice-presidents reverted to their previous titles—assistant administrators, controller, and director of nursing.

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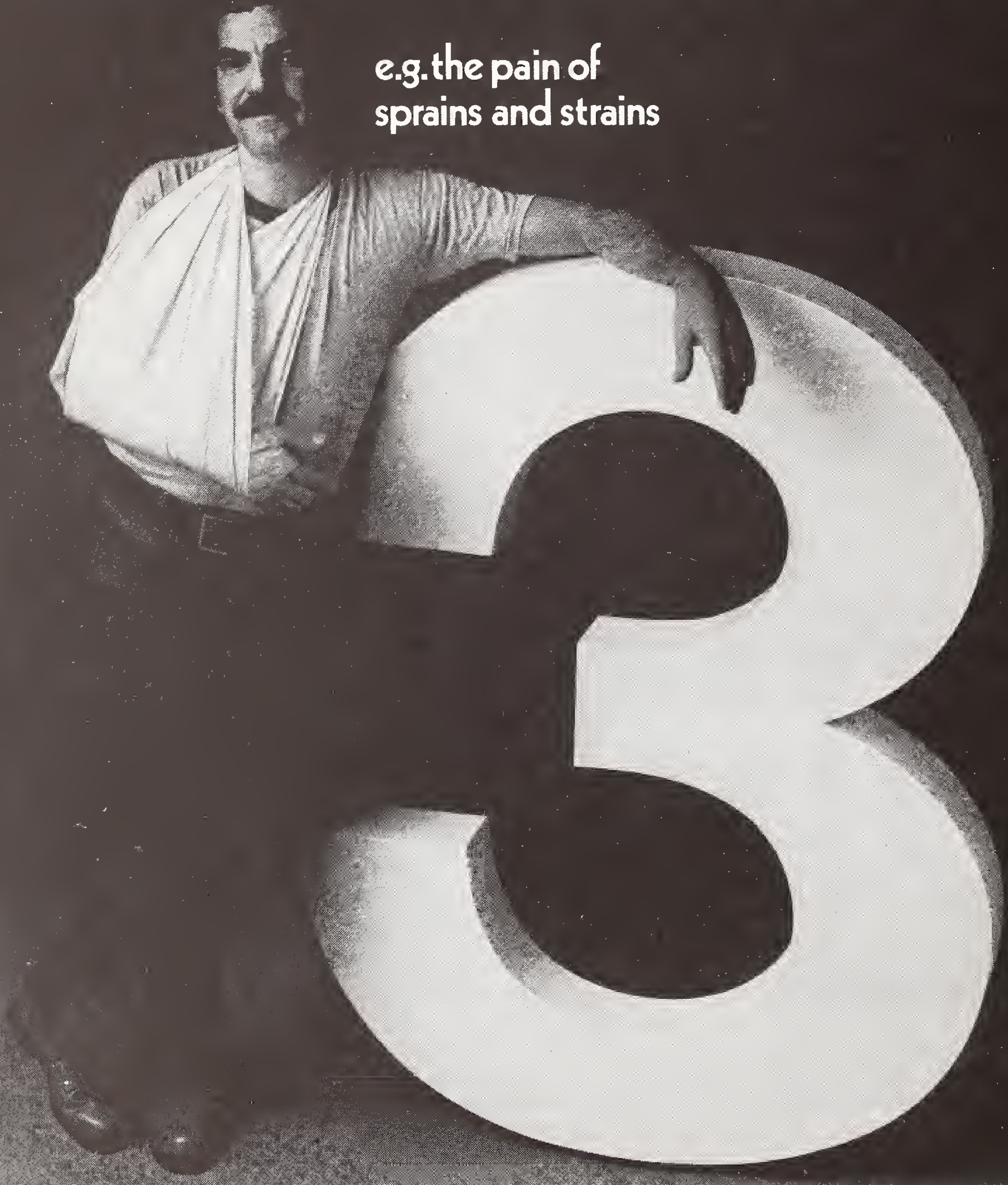

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Consumer Versus Provider: Rights and Responsibilities

William I. Gefter, M.D.

On several occasions recently, the writer attended panel discussions on the quality and delivery of health care, and witnessed the entrance of the "consumer" upon the scene. The self-styled "consumer" of health care established ready identity (whether or not by invitation) in a clear and robust voice, at times provocative, occasionally without dignity, often uninformed, but always in support of the consumer's "rights." The meetings, all before large audiences, were converted, momentarily at least, either to a marketplace where the consumer seemed to be in competition, or to an arena where the consumer assumed an adversary position *vis-a-vis* the "self-protecting and self-dominating" medical establishment, which automatically then became identified as the "provider." The writer consulted Webster for standard definitions and noted that a *consumer* is "one who utilizes economic goods," and that a *provider* is one who "supplies what is needed for sustenance or support."[1]

It appeared plainly to the writer that anyone seeking rights would expect to assume appropriate responsibilities, and it was apparent that such assumption by the writer was not in evidence on the part of the *consumer.* The concept of relating responsibilities to rights has been espoused for ages and is superbly described in philosophical form by St. Thomas Aquinas in his Summa Theologica. He inferred that there can be no right without a corresponding obligation, and that if there are no obligations, there is no reason for rights.[2]

In the interest of establishing the basis for recalling the wisdom of St. Thomas, the writer is prepared to concede that the emergence of the consumer as an activist and force in the delivery of health care is an acknowledged phenomenon. In this regard, *consumerism* is often touted in the manner of a distinctive doctrine, whereas there do not appear to be any parallel references to *providerism,* even though such concept has been extant since Adam provided the rib for Eve.

In the past, the major burden of leadership in health care has been borne by the provider—the hospital and its entire professional staff and the various community health agencies. That emphasis fortunately still prevails. The medical profession has demonstrated its awareness of obligations by assuming a number of responsibilities, including its continuing medical education and its engagement in the assessment of the care of patients through mechanisms such as medical audit and peer review—all designed to endow the professional with the maximum amount of skill needed to provide the consumer with the assurance of the highest quality of care.

The entrance upon the health scene of the consumer must by necessity expand the focus of responsibility from the hospital, staff and health agencies as provider to include the consumers of the community served.

The writer had a pertinent illustrative experience recently regarding the lack of awareness of responsibility by the consumer. A young man, newly a proud father, had emerged victoriously from a Lamaze Labor-Delivery Room where his wife had received family-centered maternity care. His joy increased when he learned that the writer (a generation older) looked favorably upon the concept of family participation in labor and delivery. My approval was qualified, however, by the provision that the husband maintain a passive role as observer and in no way offer any obstruction to the obstetrician. The added recommendation evidently failed to influence the young father's next thought. Having fully established his rights, he then asked what my reaction would be to the husband's assistance in the delivery by "merely helping hold the newborn infant as the obstetrician was performing the delivery." The husband was simply registering another expression of involvement and of sharing his wife's experience in the interest of family solidarity. He was again pleasantly surprised when I expressed approval, but he suddenly appeared catatonic when I asked him the reasonable question: "If you wish to be involved in the delivery, will you then share the medical and legal responsibilities with the obstetrician?" He confessed that he had been hasty in his zeal and had not given the matter complete attention.

What are, then, the significant responsibilities to be taken by consumers singly and collectively, as they manifest growth and influence in the planning and implementation of policies relating to the delivery of a high quality of service in the health care system?

Perhaps the representatives of the provider category have been remiss in failing to recommend responsibilities for the consumer's consideration, a few of which are herewith suggested:

(1) A major consideration in the delivery of health care is the cost, which has become exorbitant. The federal government as well as other third party payers have purported to assume financial responsibility with

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Medicare, Medicaid, Blue Cross, PSRO, etc., and have correspondingly introduced rights, which may best be summed up by the adage: we pay the piper, we call the tune. Local government agencies have virtually withdrawn from their prior supportive roles in fiscal responsibility. The consumers have struggled for years in the sincere hope that there would be satisfactory control of the cost of the care they have been accepting and claiming as their right. Their assistance in the solution of the problem of gigantic costs in the delivery of health care is solicited.

(2) Self-education regarding the delivery of quality medical care to a level comparable to the knowledge of the provider would serve constructively and effectively in terms of representation on panels and other discussion groups. This recommendation of responsibility is particularly applicable when the consumer is cast in a role of leadership.

(3) Essential for the delivery of quality care to the entire community is the education of all consumers, not by agitation regarding rights, but by inculcating a willingness to be accountable for exercising rights and by teaching the proper methods of entering reliable and legitimate health care systems. The consumer, like the professional, must be motivated by benevolence.

(4) The consumer has failed oft-times to demonstrate adequate responsibility for maintaining the security of his own family structure by neglecting the elderly and the disadvantaged. All too often, children refuse to take aged parents and grandparents into their homes because "it is too much trouble" or "there is not enough room." Consequently, hospitals, when ready to discharge elderly and chronically ill people, very commonly experience inability to place them in a desirable and familiar environment, and must seek, through dedicated social service workers, whatever setting may be available, whether or not it is suitable or acceptable to the patient. Nursing homes and other community facilities undoubtedly play a very helpful role in this regard, albeit an insufficient one.

Attention to the domiciliary needs of the aged and infirm must not be the exclusive obligation of government and health care providers, but must be shared to a major extent by the consumer. In many cultures throughout the world, as well as scattered (alas, too few) instances in our own society, all members of a family remain an integral part of its composition permanently from cradle to grave. The consumer should become as aware as the provider of health care that many ills of individuals, families and society could be alleviated by an increased concern over the ravaging effect of dissolution of the family.

(5) To the ultimate advantage of the consumer more than to the provider, a plea is earnestly made for the consumer's reestablishment of respect for the integrity and sincerity of the providers of medical care.

A reliable manifestation of esteem would be an immediate and vigorous campaign by the consumer to discourage unwarranted claims of malpractice and negligence against hospitals and professionals. The consumer could thereby serve as a strong and positive influence in the desperate search for easement of skyrocketing insurance premiums.

Even more important than the cost factor is the weakened state and questionable survival of the traditionally secure doctor-patient relationship. The consumer should have deep concern over this matter, particularly since he has contributed to the development of the poor image of the professional. Overt expressions and demonstrations by the consumer of anger and lack of trust in the provider of health care will continue to gnaw at the roots of a valuable and essential kinsmanship which may soon be destroyed. The consequences would appear to be more disastrous for the consumer than the provider, since the consumer is reliant upon the provider for survival. It would therefore be in the consumer's own best interest if he would work constructively and positively alongside the provider toward reversing a strained and deteriorating relationship. The consumer would thereby become a vital and responsible force in joining the professional in the delivery of health care high in quality to our total society in an atmosphere of faith and good will.

The thought is an obvious one that we may be excessively responsive to a rational and expected trend in modern society, but the writer does not believe that the position expressed is an overreaction. Perhaps some physicians, in awareness of having been charged for centuries with paternalism and omniscience, are sensitive to the early detection of *ultra vires* actions. It is also reasonable to assume that the physician is fundamentally trained to possess a low threshold of sensitivity as, for example, in the detection of disease in its earliest manifestation.

The design of this brief is not to stir a controversy. On the contrary, in recognition that the problem is knotty and becoming increasingly complex, the writer has intended this to represent a serious effort to persuade the consumer, in his pursuit of rights, to develop meaningful responsibilities, so that the provider will be anxious to walk hand in hand with the consumer in mutual trust and in recognition that rights and responsibilities are enjoyed and shared equitably.

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Is the Medical Advertising Writer an Endangered Species?

Maurice S. Peizer

EDITOR'S NOTE: This article is published for the light it sheds on a complex area that may be unknown to many physicians, *i.e.*, the detailed considerations and controls that determine the character and credibility of today's prescription drug advertising. In addition, the author reports on the power of the federal government over the development, release and utilization of prescription drugs.

To understand why such a question can be asked, and why it is important for any medical copywriter, one must understand what makes the medical advertising writer different from the strictly medical or science writer or from the pharmaceutical sales representative.

Like any other advertising writer, the medical copywriter knows that his function is more than informational—it is motivational. His job is to impel a specific professional audience to prescribe or dispense the products he describes. Unlike the sales representative, the copywriter is physically absent and anonymous. He is therefore accorded only as much time and attention as he can earn. If the reader does not become interested in his product or message, he can dismiss the ad at once without an "excuse me" or sense of brusque behavior. Whatever "personality" or charisma the writer may project is embodied in his words; moreover, he never forgets that he is speaking for the advertiser, the corporate person.

Unlike the sales representative, he cannot adapt his presentation to each individual in his audience nor can he change his story or its direction in midstream. He must attempt to target the common denominator, a composite physician. He therefore weighs the potential effect of what he says, and there's no changing it later. It must *work* or *fail* just as it appears in the journal or direct mail.

Because of its open, public nature, print promotion is easily monitored. The medical copywriter is decidedly on the record. He must conform to truth-in-advertising as a matter of principle and practicality, complying with regulations of the Food & Drug Administration. He will naturally try to persuade the physician to think favorably of his message and of the product he advertises.

The medical ad writer is like a lawyer making his case to the jury. He hopes his style will be appealing, and that the evidence, as he presents it, will be convincing.

The FDA ground rules

Since the passage of the Act known as the Drug Amendments of 1962 (Public Law 87-781), the Food & Drug Administration has issued a continuing flood of regulations governing the details of Rx product promotion to physicians. A basic requirement has been that the advertiser provide pertinent information relating to side effects and contraindications—with all relevant warnings, precautions, limitations, notes, etc.—along with the information relating to indications, effectiveness and advantages.

The principle of "fair balance" is applied to the ad as a whole. Information relating to side effects and contraindications must be presented "with a prominence and readability comparable with the presentation of information relating to effectiveness of the drug, taking into account all implementing factors such as typography, layout, contrast, headlines, paragraphing, white space, and any other techniques to achieve emphasis."[1] Also: "Untrue or misleading information in any part of the advertisement will not be corrected by the inclusion in another distinct part of the advertisement of a brief statement containing true information relating to side effects, contraindications, and effectiveness of the drug. If any part or theme of the advertisement would make the advertisement false or misleading by reason of the omission of appropriate or pertinent information, that part or theme shall include the appropriate qualification or pertinent information, which may be concise if it is supplemented by a prominent reference in each such page to the presence and location elsewhere in the advertisement of a more complete discussion of such qualification or information." Got it?

Even though many, if not most, doctors do not regard journal advertisements as their primary source of information in deciding when and how to prescribe a drug, the government clearly thinks otherwise and has ruled that the doctor must be supplied all essential information to equip him to make a well-based judgment. Thus, the government protects the physician from the advertiser.

So the government is saying, in effect, that medical advertising—whatever else it may be—must be an informational resource. The advertisement must inform as it sells. Indeed, one may accurately say that modern medical advertising sells with the facts—and includes *all* of the essential facts. In short, today's medical advertising writer is not the "hidden persuader" of old.

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In the past, it was not necessary to give the "whole story"—only that part (true as far as it went, if the company was scrupulous) that would secure the attention and interest of the doctor and highlight the benefits and advantages associated with proper use of the product. Other resources were available for fuller information, such as manufacturers' brochures, article reprints, various drug compendia, package inserts, textbooks of pharmacology and medicine, seminars and symposia, special courses, professional meetings, lectures, conferences with colleagues (formal and informal), detailing interviews, etc. The ad makers could create an effect through striking headlines and graphics, through effective selection, arrangement and presentation of informative material. Various motivations had to be considered, as well as principles of clear, coherent communication.

Then, as now, the manufacturer viewed advertising as a marketing tool with informational service aspects. The FDA views advertising only as a form of communication—as authentic postgraduate education—in which the advertising or marketing *interest* lies outside its mandated sphere of concern. Therefore, in specifying the manifold ways in which relevant medical information is to be provided, any effect on the persuasive efficiency of the advertising is of secondary or no interest.

Cards face up . . .

Since the aim of advertising is to motivate a prospective prescriber, one could argue that it is manipulative in intent. But since the law now requires full factual presentation, *the game is played with cards face up.* Accuracy and fair balance are legislated under threat of penalty. The government has minimized the chance of misinformation or inadequate information. Thus, the physician has been protected against sins of omission as well as commission. All that the advertiser and his writers can contribute to the effectiveness of the advertising from a marketing viewpoint is skill in communication of significant content, skill in being clear, relevant, arresting and memorable.

In Oscar Wilde's *The Picture of Dorian Gray,* Lord Henry Wotton remarks: "All influence is immoral—immoral from a scientific point of view."[2] What he meant, of course, was that in attempting to influence another, one might be diverting that individual from his own natural course of self-development. How does this bear on medical advertising? If you consider that advertisements are clearly and unmistakably advertisements and not editorial features or reports, the doctor is forewarned as to the nature and purpose of the material; at the same time, he has been given the best reason for accepting the truth and completeness of what is said. Therefore, if there is any rational basis for accepting the premise of the ad—a positive, constructive message—the basis for this decision is all there, albeit with all of the "negative" considerations. If the physician wants more information, he can obtain it from the numerous sources already mentioned. Since the products themselves have been accepted and their uses under specific conditions and methods of administration approved by the FDA, it would hardly seem possible for the physician to err on the basis of the advertisement itself.

The perennial suspect

Yet medical advertising remains the perennial suspect, an object of fear and suspicion, as if it were some form of black magic, a kind of malevolent witchcraft. This, surely, is superstition, since the rational basis for selecting a drug is there.

Nevertheless, in the persisting social climate of hostility and suspicion—not so much among practicing physicians themselves—lack of trust is rampant despite the controls. In its zeal for "zero defect" and a goal of infallible perfection, the FDA has imposed on the advertiser and his writers a multiplicity of technical and other requirements that would produce uncertainty and questioning even among experienced lawyers. With the best will in the world, therefore, making clear distinctions and proper judgments to conform with the regulations of the FDA is fraught with difficulty. Freedom from legal fault necessarily becomes the first consideration.

The Changing Character of Medical Advertising

The tone and character of medical advertising have been significantly affected by the FDA ground rules. Advertising writing normally involves considerations of dramatic emphasis, of language and substance with intellectual and emotional impact, as well as clarity, conciseness, coherence and climactic effect. The message is showcased, not just stated. Advertising was and remains, in its succinctness, precision and imaginative power, *the poetry of business.* If the informative role were to become its *only* function, the advertiser could simply reprint the package insert in attractive form, possibly adding selected clinical studies uncontradicted by other clinical studies (under pain of referring to them, if otherwise). Like anyone else, the physician is moved by what is interesting to him, what addresses his needs and provides him with useful information. But if he has too hard a time in getting it, he'll "turn off." Thus, the very zeal in ensuring full information *in advertising* may prove self-defeating to all parties concerned.

Growing Governmental Power Over Medical Practice

The concentration of control over the development, manufacture, promotion and utilization of prescription drugs in the hands of the federal government is a process rapidly approaching completion.

In a recent article in *JAMA*, Dr. William M. Wardell[3] wrote: " . . . it seems to have become accepted that the main function of government is to respond to industry's initiatives, and to curb excessive zeal, by acting as an adversary to industry in the public interest. As a result, some of the most important decisions in drug therapeutics are no longer the prerogative of the medical profession but are now assumed by industry and the regulatory agencies." Further: "Another major trend is the emergence of control over the way drugs are to be used by physicians. So far, most of these controls have arisen within the framework of the new-drug development process. As a result, government is coming to be regarded as protecting patients not only from the pharmaceutical industry but from the medical profession as well."

It has been predicted by Dr. Lee Goldsmith[4] (quoted in an article by Ken Rankin in the Dec. 1974 issue of *Physician's Management)* that after adoption of FDA's new package insert regulations, a law may be expected to the effect that "any prescriber who deviates from the indications or other limitations of use in the package insert is guilty of a misdemeanor." Clearly, the liability of physicians to malpractice suits would be correspondingly increased. As with the medical advertising writer, the physician may soon face so many controls that, as Goldsmith says, "before a doctor is able to prescribe legally, he'll have to consult his lawyer."

A Middle Ground?

The medical copywriter asks: Is there no rationale for advertising without all of the detailed information now required? Would it not be possible to limit the amount of information considered essential *in an advertisement,* provided that all of it is *true* and in *fair balance,* utilizing other communication media (such as an official drug compendium) as the ultimate source of comprehensive drug information? A modified, more moderate approach to advertising control should be feasible and effective.

With the multiplication of regulations, the medical advertising writer has to develop more meaningful concepts . . . must write better . . . motivate better. In doing so, he can continue to fulfill his primary *raison d'etre* of selling in a competitive economic system. Is the medical advertising writer an endangered species? Yes. But as a *writer,* he can adapt to changing conditions—and survive.

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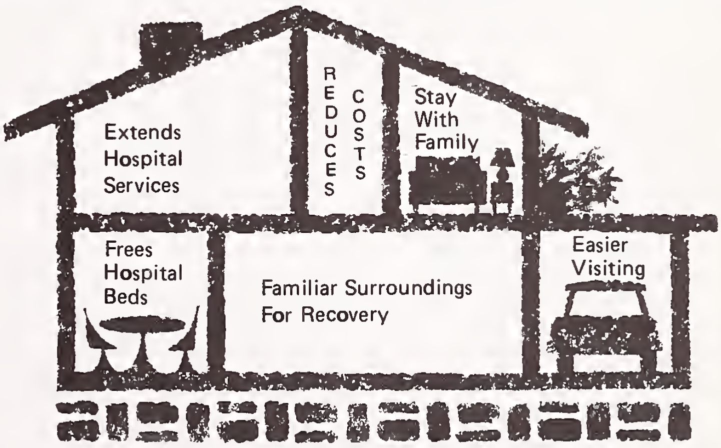

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Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct nontherapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.

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Month in Washington

The Administration has submitted an "encouraging report" to Congress on the Professional Standards Review Organizations (PSRO) program, but confessed at the same time that lawmakers should not expect too much in the way of cost savings.

Louis Hellman, MD, head of the Health Services Administration, told the House Ways and Means Oversight Subcommittee that "important progress has been made." He said in the 203 designated PSRO areas there are 65 conditional organizations performing review and another 55 in the planning stage. By the end of the fiscal year, 120 conditional PSRO's will be in operation reviewing some 3 million hospital admissions, he said. More than 106,000 physicians are now members of organized PSRO's according to the Health, Education and Welfare Department official.

Dr. Hellman said the primary purpose of the PSRO program is quality assurance and that cost-effectiveness was a secondary objective. "The quality assurance activities of PSRO's may increase the utilization of some services while decreasing that of others," he testified as—"a word of caution on expectations of a PSRO's ability to control expenditures."

At the same time, however, the Subcommittee received other information from HEW suggesting substantial economy benefits from PSRO's. In response to a subcommittee questionnaire, HEW said in some areas the average savings has been on a one-to-four (cost to savings) ratio.

Subcommittee Chairman Charles A. Vanik (D-Ohio) said "we would like to discover whether the Congressional expectation that PSRO's will hold down costs is reasonable, since improved quality of care is often incompatible with lower costs. If the Congressional goal of holding down costs through PSRO's is not reasonable, then we must give renewed attention to finding other types of cost controls."

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Legislation requiring the government to give affected parties more rights to challenge and make recommendations on proposed federal regulations has been endorsed by the American Medical Association.

Specifically backed were bills introduced in the House by Rep. Thomas Kindness (R-Ohio) and in the Senate by Sen. Charles Mathias (R-Md.) providing remedial changes in the Administrative Procedures Act aimed at opening up regulatory procedures to assure that the government doesn't overstep Congressional intent or ignore it.

Raymond T. Holden, MD, Chairman of the AMA's Board of Trustees, told the Senate Judiciary Subcommittee that such legislation "is a welcome move toward rectifying the many abuses which have arisen in the rule making process of administrative agencies."

This seems to have been especially true in the health agencies, according to Dr. Holden, who said that health regulations often have resulted in programs "unrecognizable in the original law."

At the same time, the AMA official said legislation to require complicated governmental review of regulations could "create a mechanism which could strangle the good intentions of remedial legislation."

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The Senate has passed 64-11 a bill broadening federal authority over clinical laboratories to include those engaged in intrastate operations and giving the government firmer standards control.

Under the legislation, HEW theoretically could apply the controls to individual physicians' offices. The pertinent provision states that the HEW Secretary "may exempt" such offices. As a condition of such exemption, physicians who use their offices as labs as an adjunct for treating their own patients would have to describe the qualifications of non-physician personnel who do lab work, how much they do, and the score each shows in any proficiency testing.

Sen. Carl Curtis (R-Neb.) complained that "here the government is reaching down to the country physician's office . . . I say that we are removing from people the medical services that our society now provides by giving the federal government jurisdiction over them."

The bill, which now goes to the House where similar legislation is before the House Health Subcommittee provides:

**Federal licensing of all clinical laboratories. HEW could set standards and enforce them itself or delegate enforcement to states having statutory programs meeting federal criteria. Private nonprofit accrediting groups could be used to help enforce standards if they meet federal requirements but no exemption from licensure to privately accredited laboratories is provided.

**An advisory council with membership set at 12 persons, to include representatives of nationally recognized laboratory-accreditating bodies, directors of state laboratory-licensing programs, members of the public, and not more than three

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Prepared by the Washington, D.C., Office of the American Medical Association persons who are owners, operators, or directors of laboratories.

- **HEW is authorized to waive for 2 years personnel standards for laboratory technicians employed in hospitals with fewer than 100 beds if located in a rural area.
- **An office of clinical laboratories to administer one set of uniform standards.
- **HEW may issue no license unless it has received from the applying laboratory "an accurate, itemized schedule of all current rates charged by the applicant for those laboratory services . . . and such other information as may be necessary, including full disclosures of any current contractual relationships, written or oral, between the applicant and physician respecting such services."
- **Laboratories found to be engaging in illegal financial abuses would be subject to revocation of licenses.

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One of the nation's most powerful unions—the Teamsters—backed away from support for the Kennedy-Corman bill to federalize national health care.

A high Teamsters official told a national health conference that "we have become increasingly distressed . . . by the possibility that a National Health Insurance plan which runs all of the money for the purchase of health care through the federal government, such as the Health Security Act (Kennedy-Corman), might be adopted . . . we cannot support a program that gives the federal government total control over financing and delivery of health care," said Daniel Shannon, Teamsters Executive Director of the Central States, Southeast and Southwest areas, Health Welfare and Pension Fund.

Speaking before the National Leadership Conference on America's Health Policy in Washington, D.C., Shannon said "let's maximize the utilization of the private system rather than handing the entire problem over to the government."

Hitherto, organized labor had presented what appeared to be a united block in favor of the Kennedy bill which would eliminate private health insurance and have the government finance all health care. The Teamsters had not been in the forefront of the labor push, but they had not opposed it.

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The Senate has passed legislation establishing a Presidential Commission to review all biomedical and behavioral research done by the government.

The Presidential Commission would replace an existing commission now working in the Department of Health, Education and Welfare. It would consist of 11 members from the fields of law, ethics, theology, the sciences, and health administration. Sponsors of the legislation want the Commission to have broad authority over all federal departments and agencies. A special section of the bill, now before the House, directs the Commission to investigate research in DNA.

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A top Food and Drug Administration official has warned that the integrity of the medical profession is threatened by the growing influence of drug companies on medical education and medical publications.

Bureau of Drugs Director Richard Crout, MD, told a Senate committee that "educational materials produced by and for an industry with an interest in increasing sales of drugs, will—on balance—be biased in a direction intended to promote drug use."

Dr. Crout said he considers only the *New England Journal of Medicine* and the *Journal of the American Medical Association* to be "scholarly" publications. In the 26 other medical magazines, the content tends to be "overwhelmingly optimistic about drug therapy . . . the issue is not whether the article is scientifically correct or whether it is proper to publish such information . . . (but) whether such an article presents . . . in the guise of a scientific paper, promotional information which otherwise could not be legally published as drug advertising or drug labelling."

Crout was also critical of pharmaceutical companies' funding of continuing post graduate education for physicians.

The FDA will try to establish a clear definition of the role of audio-visual and printed materials funded by the pharmaceutical companies in post-graduate medical education, Dr. Crout told the Senate Monopoly Subcommittee headed by Sen. Gaylord Nelson (D-Wis.).

Dr. Crout said the new regulations would "permit truly independently prepared educational materials which do not have an overall promotional message to be distributed by drug manufacturers."

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Federal control of medical devices similar to its present authority over drugs has been passed by the Congress into law, capping a ten-year campaign by the government.

Federal courts in recent years have given the Food and Drug Administration considerable authority to regulate devices as well as drugs. The Congressional action had been long anticipated by FDA which has formed advisory committees that already have reviewed and classified most devices on the market.

The President's Page

At the Semi-Annual AMA House of Delegates meeting in Hawaii, a resolution introduced by the six New England states on the subject of "AMA Goals" was passed. The essentials of the resolution were "that the AMA reaffirm its dedication to active participation in the solution of problems in public health and health delivery, functioning in these areas as the advocate of the patient as well as the physician" and "that such activities in the future be given the highest priority with regard to allocation of monies and energies of the Association . . . "

The reference committee which heard this resolution initially felt that there was no need for its adoption, in that review of the program budget for 1976 indicated that the intent of the resolution was being met. Despite this recommendation from the reference committee the original resolution was passed. This would seem to indicate that there existed some opinion that the routine approach to matters of public health and health delivery is not completely satisfactory.

The passage of this resolution raises a very real question concerning our goals. Certainly matters other than those of public health have assumed increasing importance in our considerations these days. We have the problems of professional liability, educational requirements to keep abreast of the many advancements being made, peer review and its many ramifications, cost accountability, how to deal with the "sick" physician and many more. These are not matters that can or should be neglected. They are not matters that we can afford to have taken out of our control. Our constant vigilance is required. Our ability to practice the type of medicine we feel is best for our patients is dependent upon the solution of problems of this nature.

Still the New England resolution calls upon us to re-examine our goals. Have we become so much involved with the economics of medicine that we are devoting most of our efforts to these problems?

Certainly we will all agree that our basic concern is the health of the community. Do we have a responsibility beyond that of individual patient care to this basic concern? Are we meeting this responsibility? These are the questions the New England resolution calls upon us to address.

A recent issue of *Medical World News* reviewed the House of Delegates meeting in Hawaii and implied that the only resolution that was passed during the entire meeting which did not in some way serve the self interests of the physicians was this New England resolution. The implication again was that we were presenting the image of a trade union rather than that of a profession. This is a trap into which we can fall very easily because of the urgency of so many of our concerns in the delivery of health care. It is one which we must be most careful to avoid.

Certainly individual medical groups are giving attention to the various public health measures with which we are concerned. Air pollution, diet, exercise, smoking, alcoholism and other such issues are receiving the attention of different medical organizations throughout the country and no one can say that medicine is ignoring them. The question, however, is rather "Is organized medicine addressing them sufficiently?"

We argue that only through an all embracing organization such as the American Medical Association can all the physicians be represented at one time. We believe this to be true. Is such an organization to express only our ideas as they pertain to economic and political matters or is it also to play an integral part in our activities as regards the health of the country.

The New England Resolution reminds us of our prime purpose for existence. We must be careful not to lose sight of this goal. Serious considerations need be given to answering the question whether as an organized group we are giving the questions of public health alone the attention they merit. These are matters which merit attention both at the level of the State Society and also at the level of each individual county association.

The Massachusetts Medical Society has embarked on this area already with its "FIGHT SELF POLLUTION CAMPAIGN." Their goal is "to educate the public on the specifics of 'self-pollution' and to urge the public to stay healthy." The focus of the campaign is that "one must take the responsibility for one's own health maintenance."

To get this message across, they are using a variety of materials and outlets including, among others, news releases, brochures, billboards, TV and radio spots, statements by prominent citizens, stickers, ads, etc.

Many other states, including Connecticut, have expressed an interest in this program but to the best of my knowledge, none have implemented it as yet.

Should this be a prime area of our concern?

Hilliard Spitz, M.D.
President

Reflections from the Dean's Office

Robert U. Massey, M.D.

Several days ago at a luncheon meeting some of us were discussing the gloomy job prospects for this year's graduates. We agreed that they faced difficult times, but most believed that somehow the market would absorb them. More serious, several felt, was the perilous state of our society, the grave dangers, internal and external, threatening the West and portending almost certain collapse in the lifetime of this generation. Older men expressed relief that they might be spared the frightful days which were to come. One recalled the Greek view of history as an ever recurring cycle in which chaos followed democracy and tyranny had to be invoked to restore order. We agreed that something like that might be happening in India, and as always, someone mentioned Spengler's, "Decline of the West."

In January 1649, Dr. Thomas Browne's world came undone with the beheading of his sovereign, Charles I, at Whitehall. During the eleven years of the Commonwealth, the author of *Religio Medici* practiced medicine at Norwich, raised his considerable family, pursued his hobby of natural history, and continued to write. He rarely referred to the violent and unsettling times; he spoke of the execution of Charles I as a "horrid murther," complained to his son of the Puritan destruction of the churches, and called Cromwell a usurper. In one of his letters to his son Thomas, also a physician, he wrote, "Times look troublesome, but you have an honest and peaceable profession which may employ you, and discretion to guide your words and actions."

The forces of history are like the inexorable laws of nature, but less well understood. Congresses, parliaments, presidents, prime ministers, dictators, and bureaucrats make laws without policy and determine policies without law, and deny all responsibility for the consequences, which neither they nor we understand anyway.

Meanwhile, lives must be lived. Osler admonished us to cultivate the "habit of a life of Day-Tight Compartments." He reminded us of a sentence from Thomas Carlyle, *"Our main business is not to see what lies dimly at a distance, but to do what lies clearly at hand."* "The workers in Christ's vineyard were hired by the day; only for this day are we to ask for our daily bread, and we are expressly bidden to take no thought for the morrow," he wrote in "A Way of Life."[1] And later in the same address he re-emphasized that theme: "The load of tomorrow, added to that of yesterday, carried today makes the strongest falter. Shut off the future as tightly as the past."[1]

It is hard to escape the maddening press of events anywhere on this small globe; television and radio have robbed us of our retreats and would steal our perspective as well. It was easier for Browne to be busy in his practice and quiet in his library in Norwich with the news from London two days away.

Change is certain and always threatening; there has been little evidence in recent years that change, especially social or political change, has anything to do with progress. Man's power to destroy has never been greater. In all this there may indeed be cause for despair, but collective despair, which needs not take away private hope. The work of medicine, the discovery of new knowledge will go on in spite of the threats of war in the Near East and the fatuous roaring of politicians at home.

In his address for the University of Connecticut Commencement this year, Lewis Thomas reminded the graduates that our species was still young. "We are, from any evolutionary point of view only at the beginning of our emergence. What we need is more time, and there is no shortage of that, and more knowledge. There is indeed a shortage of that, but this is no problem; we are good at getting knowledge."[2]

The doomsayers will continue to forecast the holocaust, and they may be right. Those who study the future say we cannot know much for certain beyond a few years, seven at most. There have been unanticipated events which have made all predictions wrong, even those for tomorrow. History provides reason for optimism; the darkness before the Renaissance seemed blacker than at anytime before. The Renaissance in science may have just begun, to be followed perhaps by a new Enlightenment.

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1. Osler WO: *A Way of Life,* Charles C. Thomas, Springfield, 1969
2. Thomas Lewis: Commencement Address, University of Connecticut, May 17, 1976

ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut, School of Medicine, Farmington.

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EDITORIALS

The A.M.A. and Medical School Class Size

About 3 years ago, Dr. Fred Fabro kindly accepted my invitation to talk to the first year medical students at Yale. The discussion quickly got around to the A.M.A. and a student asked Dr. Fabro why the A.M.A. forced the medical schools to limit class size. Fred asked how many other students believed the A.M.A. controlled class size. Most of them raised their hands. In their view, the A.M.A. conspired to keep class size down so there would be fewer doctors and each one of them could make more money. When Fred and I told the students that medical school faculties and administrations determined class size, there was disbelief on their faces.

If medical students believe in an A.M.A. conspiracy to limit class size, it is not difficult to understand why so many other people do. After all, in the last 10 years the number of medical school applicants has gone from 18,250 to about 44,000 and the number of applications from 87,627 to about 370,000. The budgets of medical schools run into many millions of dollars. There are plenty of qualified applicants and there seems to be lots of money available. Why don't class sizes increase and who's keeping them down?

In private medical schools, the faculty and administration determine class size. In state schools the state legislature is often a determining factor. In my 4 years on a medical school admissions committee, I had not a single communication from the A.M.A. or the state or local medical societies about class size. Dr. Tom Lentz who chairs the Admissions Committee at Yale assures me that no medical society has ever tried to influence class size in his years on the committee.

Where does the misconception arise?

In recent years, the federal government has provided capitation grants to medical schools that produce a strong financial incentive to increase class size. Many, including the A.M.A., have opposed such grants on the grounds that they constitute further government intrusion into medical education. That A.M.A. stand may have been misinterpreted.

The fears about government intrusion into medical education have a firm base in fact. Some national legislators are now trying to influence not only the size of classes but the nature of medical education itself. The pressure is for more family doctors. I don't want to get into that issue in this brief communication. But the implication is clear. If you take the federal dollar, you pay the federal price.

It is not easy for medical schools to increase class size. The most immediate constraints are limitations of laboratory space in the pre-clinical years and hospital facilities for clinical clerks. Money, as always, is a large limiting factor. But even in the face of these problems, the number of places in the freshman class in all U.S. medical schools has gone from 8,991 to about 15,500 in the last decade. This is an impressive increase and one that has already resulted in a better prepared house staff throughout the country.

There are two indoor athletic events in which I see frequent competition. They are hurling accusations and casting aspersions at the A.M.A. I'd like to see the competition limited to those who have their facts straight.

Adrian M. Ostfeld, M.D.

Professor of Epidemiology and Public Health, Yale University School of Medicine

The Health Care Industry and the Health Care Delivery System—Bah, Humbug!

There are two terms currently in vogue used to describe the aggregate of all individuals and institutions engaged in the treatment and prevention of disease in America. The two terms are "health care industry" and "health care delivery system." Both terms are not only inappropriate but demeaning to the thousands of American physicians responsible for the daily care of the sick. The terms were obviously not conceived by anyone who has treated patients and represent bureaucratic jargon at its worst.

The term "health care industry" is faulty for a number of reasons. The practicing physician is a member of what Webster[1] defines as one of the three learned professions (theology, law, and medicine). By definition, members of these professions profess ideals and goals above and beyond the mere commercial production of goods and services—Webster's definition of industry. Surely no minister, priest, or rabbi would describe himself as belonging to the "soul care industry" nor would a lawyer or judge describe himself as belonging to the "justice delivery system." It is true that many large industries producing goods and services used to aid the treatment of the sick have developed along with the medical profession. Drug companies, hospitals, ambulance services, etc. might well be classified as industries, but physicians surely do not deserve to be included.

Even if physicians are excluded from the "health care industry," the term remains faulty. The goods and services produced by the industry are not used to care for health but rather to treat or prevent disease. All definitions[1] of health contain the basic concept that health is a state of being free of disease. "Health care" is, therefore, a misnomer used instead of the proper term, "disease treatment and prevention." "Health care delivery system" is an even more inane term. The "health care" portion is incorrect for the reasons already discussed, "delivery" because there is no way to deliver something that doesn't exist, and "system" because there is obviously no system involved.

A recent editorial[2] in the *JAMA* described "health care" as a "euphemistic myth." The "health care delivery system" and "health care industry" are equally as mythical. The terms should be abandoned by the medical profession and the wretch who conceived them should be boiled in his own pudding and buried with a stake of holly through his heart. Bah, humbug!

Melville P. Roberts, M.D.

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2. Moser RH: Jangled Semantics, JAMA 231:1371, 1975.

Health Education

For over forty years efforts have been made to get meaningful education for health curriculum into the school systems of Connecticut. The statutes covering this in Connecticut law are minimal and vague. The lukewarm lip service given to the idea by the Department of Education borders on hostility. I suppose the reason for this is because it would cost money and, probably more important, some of the existing curricula would have to be displaced. In other words, it would rock the boat.

We bend our efforts toward upgrading the quality of medical care and toward making medical care available to all those who need it. But we neglect to educate people as to how to maintain their good health and how to recognize early the approach of ill health. If we wish people to take advantage of available health care facilities, it is essential that they receive during the course of their lives a good basic education for health. The best time to do this is when they are in their formative years, kindergarten through senior year high school. The Connecticut State Medical Society has been working on this for years to no avail. The Woman's Auxiliary and the Connecticut Advisory Council on School Health have been working on it for years to no avail. Voluntary implementation has failed utterly and miserably. The legislature has been approached time after time, and the effort has failed.

The spark and the motivation seems to be lacking no matter how obvious the need, no matter how worthy the cause. The disciples have shouted into the storm, but the gales of inertia have swept most of them away.

The placating answers call for the voluntary approach at the level of the local school board. For forty years we have tried this approach without success. Is this the way we are going after the swine influenza organism? Hardly. Is this the way we went after fluoridation, typhoid, polio, rubella? No, it is not.

Is there any more pernicious and ultimately deadly disease than ignorance? I think not.

The time has come to mandate education for health curriculum into the school systems of Connecticut, kindergarten through senior year high, and the time to do it is now.

James H. Root, Jr., M.D.

Past-President,
Connecticut State Medical Society

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

MANCHESTER MEMORIAL HOSPITAL ISSUE

To the Editor: Congratulations on the Manchester Hospital articles published in the May issue of *Connecticut Medicine.*

My mind goes back to early years of the Hospital when a very charming and efficient woman was Director and when Dr. D. C. Y. Moore was Health Director. These two gracious people gave me a room for a period when, at the request of the Town, our Department of Health made a health survey of the community without charge but with the understanding, as usual, that our report would be published as it was, and filed in many places and given to many people.

I observed Dr. Moore remove the tonsils of several children free one morning; as he did a lot of free medical work. He was one of our most efficient local health directors along with Dr. Brad Walker of Cornwall.

Three cheers for Manchester and the interested people there, including our able but overworked State Deputy Commissioner of Health, Dr. Harold Barrett.

Ira Vaughan Hiscock,
M.P.H., M.D., Sc.D.

Emeritus Professor of Public Health and former chairman of the School of Public Health and of the University Board of Health, Yale University.

ANESTHESIA AT HARTFORD HOSPITAL

To the Editor: The excellence of your articles in the March 1976 issue of *Connecticut Medicine* concerning anesthesia, together with Dr. Edmund T. Welch's editorial, deserve commendation.

Unless one had worked for many years with these people, as I have, one can hardly believe that such devotion to good anaesthesiology and medicine exists. The founder of anesthesiology as a specialty in Hartford Hospital, Dr. R. M. Tovell, would be proud of his results.

That fine anesthesiologist and poet, Dr. Nicholas Giosa, has tackled a subject, "Malignant Hyperthermia," in depth. I am aware of times when we considered it, but never met it, while I was operating. It was reported in other ophthalmic theatres in the '60s. I would be happy to have Dr. Giosa present if we had to combat it or preferably, to prevent it.

Dr. Charles M. Barbour, that Dean of careful anesthesiology, has listed a score or more of factors that the experts in this field must always have at their fingertips and frontal lobes. In this short article, one finds more experience and know-how than in most textbooks, i.e. Polycythemia, MAO, Aspirin, Pheochromocytoma, leading up to Professor J. O'Rourke's work (U.Conn) on Nuclear Dynamic Functions.

It was most valuable to get the anaesthesiologists out of their secluded chambers, and to have such incontrovertible evidence of their expertise in medicine. As Dr. Welch's poem by Dag Hammarskjold says—"There where Life resounds."

One verse for Dr. Welch and the anaesthesiologists:

> "Like ears of wheat, in wheatfield growing,
> so a thousand thoughts spring and tremble
> In the minds of men."
>
> (From Heinrich Heine's "Epilogue")

Henry L. Birge, M.D.

East Hartland, CT.

HEMOGLOBINOPATHIES AND ANESTHESIA

To the Editor: Dr. Meridy's paper on the hemoglobinopathies and their clinical relevance to anesthesia (*Connecticut Medicine,* 40:4, 253-258) makes delightful reading. He states however: "if the operation is not urgent, it should not be undertaken until...... marked reticulocytosis indicates active erythropoiesis." I believe that the converse is true, and that one of the aims in the preoperative preparation of a patient is the suppression of erythropiesis to the point where the reticulocyte count is kept as low as possible. This is achieved with red cell transfusions, and although it has been suggested that the reticulocyte count should be kept at below 1%,[1] this is an ideal that can seldom be attained.

There is no unanimity of thought on what constitutes a 'safe' level of Hemoglobin A, but some clinicians feel that 25% to 30% of Hemoglobin A is an acceptable value.[2] I would be interested to hear what other readers think.

Sundaram V. Ramanan, M.D., F.A.C.P.

Director of Hematology/Oncology
Assistant Chief of Medicine
Mount Sinai Hospital, Hartford, CT.

1. Ashbell TS: Surgical Forum (1972) 23:516-8.
2. Bellina and Bickers, So.Med.J. (1974) 67:4, 426-430.

The above letter was referred to Dr. Meridy, who offers the following reply:

To the Editor: I would like to thank Dr. Ramanan for his comment and believe we are in agreement. Under *preoperative preparation* it is stated that, "Preoperatively multiple small transfusions of packed red blood cells can be given . . . .

This has a dual effect. It acts as an exchange transfusion allowing the patient to come to operation with a greater number of erythrocytes containing HbA. Also it depresses erythropoiesis so less HbS is produced . . . " Therefore the reference made to marked reticulocytosis may be contrary to the original thesis or an overstatement.

Howard W. Meridy, M.D.

Department of Anesthesiology
Hartford Hospital

LAWYERS—AGAIN!

To the Editor: Time magazine reported in a recent issue that Manhattan Attorney Person proposes to sell shares in large lawsuits and that Judge Dooling believes "he has a point." The expected reaction of judicial wisdom should be an emphatic "NO," but the possibility now exists that prospecting investors could team up with professional faultfinders to concoct pretexts to take anyone's property away.

The "feeding frenzy" on doctors by plaintiffs' attorneys in the malpractice epidemic has already destroyed the freedom from fear of lawsuit. Lawyers Dooling and Person are preparing for attacks by "investors" in lawsuit shares to go market-gunning for any private property. This opens up the Dark Ages for property ownership and threatens all freedom.

The legal profession with its unlimited power, proposes to make a "natural resource" of property, to be taken up by means of litigation. As a scheme for the destruction of a capitalist society, this is diabolical and simple.

Since free markets, political and religious freedoms today exist only within capitalist societies, the avarice that now overcomes some lawyers is about to try to destroy the nation most devoted to democracy.

This illustrates how "power corrupts." The unabating power of the legal profession lies in the fact that 100% of judges, 75% of legislators, and 50% of elected executives are lawyers. The profession which gives us a judicial system to stabilize society has become so zealous for profit that it could destroy our whole system. It would take a concerted national furor to make a dent in legal power.

As the most affected in the present litigation epidemic, medicine must sound the alarm. Failure to interpret a blip on a radar screen allowed the Japanese raiders to destroy Pearl Harbor unopposed. Failure to warn everyone of the meaning of the *Time* magazine report would be equivalent to ignoring significant advance information.

Doctors could make a one-day national strike to publicize the fact. Or before such action is taken, could request a 24-hour (on the hour) tolling of church bells and factory whistles to warn that democracy is in grave danger.

If sentiment in defense of the American way of life and of democracy is aroused, only two things need be done to save the nation.

1. Force passage of laws pushing up the ethics of United States plaintiffs' attorneys to the level of Canadian lawyers who do not consider contingent fees as ethical.

2. Require all plaintiffs' lawyers to be government employees just like prosecuting attorneys.

Judge Dooling and Attorney Person would make pirates of plaintiffs' attorneys. To save a nation, the "jaws" of plaintiffs' attorneys have to come under better control.

Sidney Vernon, M.D.

Willimantic, CT

SPECIAL NOTICES

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Richard C. Pembrook, New London
Ronald E. Snyder, Norwich
James E. Watson, Norwich

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Charles Montano, Old Saybrook
Laura Yelinek, Middletown

LITCHFIELD COUNTY

John Joseph Barrett, Goshen
Leonardo Perez Beup, Terryville
Joseph John Creme, Westfield
Dorothy Jeannette Marlow, Kent
Alden Walter Seleman, Bristol

(continued on pg. 504)

Statement of the AMA Judicial Council Re: Advertising and Solicitation

This statement reaffirms the long-standing policy of the Judicial Council on advertising and solicitation by physicians. The *Principles of Medical Ethics* are intended to discourage abusive practices that exploit patients and the public and interfere with freedom in making an informed choice of physicians and free competition among physicians.

Advertising —The *Principles* do not proscribe advertising; they proscribe the solicitation of patients. Advertising means the action of making information or intention known to the public. The public is entitled to know the names of physicians, the type of their practices, the location of their offices, their office hours, and other useful information that will enable people to make a more informed choice of physician.

The physician may furnish this information through the accepted local media of advertising or communication, which are open to all physicians on like conditions. Office signs, professional cards, dignified announcements, telephone directory listings, and reputable directories are examples of acceptable media for making information available to the public.

A physician may give biographical and other relevant data for listing in a reputable directory. A directory is not reputable if its contents are false, misleading, or deceptive or if it is promoted through fraud or misrepresentation. If the physician, at his option, chooses to supply fee information, the published data may include his charge for a standard office visit or his fee or range of fees for specific types of services, provided disclosure is made of the variable and other pertinent factors affecting the amount of the fee specified. The published data may include other relevant facts about the physician, but false, misleading, or deceptive statements or claims should be avoided.

Local, state, or specialty medical associations, as autonomous organizations, may have ethical restrictions on advertising, solicitation of patients, or other professional conduct of physicians that exceed the *Principles of Medical Ethics.* Furthermore, specific legal restrictions on advertising or solicitation of patients exist in the medical licensure laws of at least 34 states. Other states provide regulation through statutory authority to impose penalties for unprofessional conduct.

Solicitation —The term "solicitation" in the *Principles* means the attempt to obtain patients by persuasion or influence, using statements or claims that (1) contain testimonials, (2) are intended or likely to create inflated or unjustified expectations of favorable results, (3) are self-laudatory and imply that the physician has skills superior to other physicians engaged in his field or specialty of practice, or (4) contain incorrect or incomplete facts, or representations or implications that are likely to cause the average person to misunderstand or be deceived.

Competition —Some competitive practices accepted in ordinary commercial and industrial enterprises—where profit-making is the primary objective—are inappropriate among physicians. Commercial enterprises, for example, are free to solicit business by paying commissions. They have no duty to lower prices to the poor. Commercial enterprises are generally free to engage in advertising "puffery," to be boldly self-laudatory in making claims of superiority, and to emphasize favorable features without disclosing unfavorable information.

Physicians, by contrast, have an ethical duty to subordinate financial reward to social responsibility. A physician should not engage in practices for pecuniary gain that interfere with his medical judgment and skill or cause a deterioration of the quality of medical care. Ability to pay should be considered in reducing fees, and excessive fees are unethical.

Physicians should not pay commissions or rebates or give kickbacks for the referral of patients. Likewise, they should not make extravagant claims or proclaim extraordinary skills. Such practices, however common they may be in the commercial world, are unethical in the practice of medicine because they are injurious to the public.

Freedom of choice of physician and free competition among physicians are prerequisites of optimal medical care. The *Principles of Medical Ethics* are intended to curtail abusive practices that impinge on these freedoms and exploit patients and the public.

AMA Judicial Council
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Summary of Actions
Council Meeting

Wednesday, May 19, 1976

Attendance

Present were: Drs. Spitz, Friedberg, Freedman, Backhus, Nolan, Grendon, Van Syckle, Canzonetti, Bradley, Cramer, Fabro, Granoff, Kamens, Robinson, Harkins, James, Mendillo, Krinsky, Sonnen, Whalen, McGarry, Ahrens, Sadowski, Vidone, Parrella, Barrett, Zlotsky and Middleton.

Also present: Mrs. Lindquist, Mrs. Arafeh (CSMS Auxiliary President), Mr. Martel (FCMA Executive Secretary), Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Hess, Johnson, Beck, Magram and Eslami.

Organizational Meeting

The organizational meeting of the Council for 1976-77 was called to order by the President, Hilliard Spitz. Following the President's opening remarks and the introduction of members and guests, elections of a Chairman and Vice Chairman of the Council for 1976-77 were held. Those elected: Chairman—David A. Grendon, Sharon; Vice Chairman—Guy W. Van Syckle, Danbury.

Business Meeting
Routine Business

Approval of Minutes

Note was made that the published minutes of the meeting of March 24, 1976, had been approved at the House of Delegates meeting on 4/28/76 as part of the "Report of the Council."

Life Memberships

It was VOTED to approve applications for Life Membership received from the following Active Members:

Noah Barysh, 93 West Street, Danbury
Fred J. Fagan, 19 Glenwood Avenue, New London
Francis Gallo, 10 Hinsdale Avenue, Winsted
Emanuel F. Golino, 164 Main Street, East Hartford
Robert T. Henkle, 132 Ocean Avenue, New London
William B. Koufman, 186 Sherman Avenue, New Haven

Date of Next Meeting

The Chairman scheduled the next meeting of the Council for Thursday, June 17, 1976.

Old, New and Special Business

Election of Student Members

It was VOTED to elect to Student Membership three Connecticut residents who are enrolled in U.S. medical Schools, as follows:

Brian Kavanagh, 22 Lakeshore Drive, Apt. A-3, Farmington
University of Connecticut School of Medicine—Class of 1979
Pre-Med: Princeton University
Parent: John J. Kavanagh

William H. Nealon, 701 Steamboat Road, Greenwich
Jefferson Medical College—Class of 1979
Pre-Med: Trinity College
Parent: Thomas E. Nealon, Jr., M.D.

Roy L. Silverstein, 24 Woodlawn Road, New London
Emory University—Class of 1976
Pre-Med: Brown University
Parent: S. B. Silverstein

Implementation of Matters Referred by House of Delegates

(a) *Promotion of AMA Membership:* It was VOTED to refer to the Connecticut AMA Delegation, for study and report to the Council, a charge to develop a comprehensive plan for implementing the directive of the House of Delegates that "the leaderships of the County Associations and the State Society develop an informational campaign designed to make the medical profession aware of the reasons for, and advantages of, joining the American Medical Association."

(b) *Involvement of Medical Students and Interns-Residents in Organizational Medicine:* It was VOTED to refer to the Committee on Cooperation with the Medical Schools of Connecticut, for study and report to the Council, a directive of the

House of Delegates that "special efforts should be made by the State Society and County Association leaderships to encourage medical students, interns and residents to become actively involved in the activities of the County Associations, the State Medical Society and the American Medical Association."

Appointments, Resignations, Etc.

(a) *Committee on Hospitals:* It was VOTED to appoint Lawrence B. Ahrens, New Britain, to membership on the Committee for 1976-77.

(b) *Nomination to Connecticut Public Health Council:* Having received information which indicated that the death of Norman H. Gardner, East Hampton, may have caused a vacancy to exist in the membership of the CPHC, it was VOTED to recommend to Governor Grasso the appointment of Morris A. Granoff, New Haven, to complete Dr. Gardner's unexpired term (until 6/30/81) as a member of the CPHC.

(c) *Nominees to Commission on Hospitals and Health Care:* Having been apprised that the current term of Sidney L. Cramer, Hartford, as the Society's representative on the Commission will expire on June 30, 1976, and that the statutes call for the Society to submit three nominees (for the Governor's appointment of one) for this post for a term of five years, the Council VOTED to submit nominees to the Governor as follows: Sidney L. Cramer, Hartford; Stuart Ragland, Jr., Colebrook; and David A. Grendon, Sharon.

It was further VOTED that, while three nominees are submitted as prescribed by Statute (Public Act No. 75-362, Section 2), Governor Grasso is to be apprised that the Council strongly favors the appointment of Sidney L. Cramer, Hartford, to succeed himself as a Commission member; that, in the Council's opinion, Dr. Cramer has fully, faithfully and productively discharged his duties as a Commissioner during his initial term of three years.

(d) *Committee on Accident Prevention and Emergency Medical Services:* It was VOTED to accept the resignation of Stewart J. Petrie, Ansonia, as a member of the Committee.

(e) *CSMS Representative, Connecticut Cancer Epidemiology Program Council:* It was VOTED to accept with regret the resignation of Wayne P. Whitcomb, New Haven, from this representative post. Since the two representatives and alternate representatives were appointed by the Council for two-year terms in 1972, and their appointments have never been renewed by the Council, it was VOTED to request the Cancer Coordinating Committee to make recommendations to the Council for successor appointments in all four posts, such appointments then to be transmitted to the CCEPC.

(f) *Representatives, Task Force on CAT Scanners, Commission on Hospitals and Health Care:* The President, Hilliard Spitz, informed the Council that, at the request of the Commission on H and HC, he had arranged with two CSMS members to serve on the subject Task Force as follows: Alan E. Zimmer, Danbury, and Michael Dogali, Bridgeport.

(g) *President, CSMS Auxiliary:* Mrs. Mehadin Arafeh, Middletown, was introduced as the new President of the Auxiliary and invited to attend the meetings of the Council on a regular basis.

Report—Ad Hoc Committee to Study County Association Review Procedures

It was VOTED to approve, and to transmit to the House of Delegates with recommendation for approval, a subject report submitted by the Ad Hoc Committee. In brief, the report contained a series of ten procedural guidelines which, if followed by the eight component County Medical Associations and CSMS, would serve to make review procedures basically uniform throughout the state. However, the Council further VOTED to request the Ad Hoc Committee to consider including in the report additional guidelines which would cover situations in which: (a) The inquiry/complaint charges the physician with aberrant sexual behavior toward the patient; (b) an inquiry/complaint which asks for an opinion as to whether the physician prescribed the proper treatment or performed the operation competently in light of the result as viewed by the patient; i.e., when the question of malpractice is raised if only by implication; and (c) the inquiry/complaint is referred to the County Association by the Medical Examining Board, and calls for an "investigation" re alcoholism, drug addiction, mental illness, etc. by the County Association. The common denominator of the foregoing situations is: What advice should the County Association give the inquirer/complainant in the event that it is beyond the jurisdiction and/or resources of the Association to pass definitive judgment on the question presented?

Another point of view expressed during the discussion of the report suggested that "medical discipline" is becoming so complex and quasi-legal in nature (more and more involvement of attorneys for the accused and the peer review agency; suits and countersuits, etc.) and that, for this reason, perhaps organized medical units should seek to become less aggressive in the area of medical discipline, rather than more aggressive. This point of view, also, is to be presented to the Ad Hoc Committee for consideration and report.

Report—CSMS Representative, Commission on Hospitals and Health Care

It was VOTED to receive as information a report filed by Sidney L. Cramer, Hartford, a member of the Commission, which brought to the Council's attention various "facts and figures" and differing points of view that the Commission had received and discussed at a 4/13/76 meeting devoted to the subject of CAT Scanners. It appeared that the principal issues discussed concerned the costs of installing and operating the Scanners, the charges to be made for scans and the question of whether all hospitals, or only selected ones, should be approved for installation by the Commission. A Task Force has been formed to make a study of these matters.

Communication re Section

The Council reviewed a communication from the president of a Section which acknowledged that the Section has been unable to comply with the Bylaws re required section meetings (because of a recurring annual conflict with meetings of an American Academy), expressed grave doubt that such compliance will be possible in the foreseeable future, and requested the Council to consider amending the subject Bylaws provisions "in some way" to accommodate the problems of the Section re meetings and permit it to maintain active status. Following discussion of the Section's communication, the Council VOTED; (a) to reaffirm that the primary purpose of sections is to contribute educationally to the Scientific Assembly, and find that the present Bylaws provide sufficient latitude to accommodate a reasonable number of conflicts between prescribed section meetings and meetings of other organizations; and (b) to recommend to the next meeting of the House of Delegates that authorization for the Section be withdrawn unless, in the interim, the Section finds it possible to comply with the applicable Bylaws re required section meetings.

In a related action, it was VOTED, that the Council write a letter to all sections of the Society urging them to orient their programs at the time of the annual meeting not only to just their members, but the membership at large, if possible.

Communication—HCMA Executive Director

The Council received a communication from the HCMA Executive Director which requested that the Council consider amending Article V, Section 3, of the Bylaws by changing or deleting the provision that a member of the Society serving as a delegate to CSMS "must have been an Active Member or Life Member of The Society for at least two years immediately preceding the session of the House in which he is to serve." Following pro and con discussion of the subject Bylaws provision, and the desirability of changing same, the Council VOTED "to find that a single (or rare) instance of a 'problem' being created by the subject provision does not warrant amending the Bylaws as requested."

Report—Meeting of Connecticut Lung Ass'n re Influenza Immunization Program

It was VOTED to receive as information a subject report submitted by Jerome K. Freedman, New Haven, on his attendance at a 5/12/76 meeting of the CLA at which the epidemiologic reasons of experts for predicting an outbreak of influenza (swine virus) later this year or early in 1977 were presented; also, the *modus operandi* that is in the process of being developed to implement the massive, nationwide immunization program that has been approved by the Congress. The report noted that there will be three types of vaccine: (a) 200 million doses of monovalent Swine Influenza Virus; (b) 20 million doses of bivalent vaccine for the high risk population, containing both Victoria-A and Swine Virus components; and (c) 20 million doses of Influenza B vaccine, apparently to be administered by private providers and apart from the nationwide program.

The Council further VOTED to approve recommendations made by Dr. Freedman as follows:

1. That the Connecticut State Medical Society go on record in expressing its concern as to the potential danger of a Pandemic outbreak of Swine Influenza.
2. That the Connecticut State Medical Society communicate its concern to the State Commissioner of Health and its willingness to assist in the program of mass immunization, as well as in planning for it.
3. That the Connecticut State Medical Society communicate its anxiety to Dr. Don Millar at the Communicable Disease Center in Atlanta concerning the different distribution of the Influenza B Virus Vaccine which is important for the high risk population. The State Society should urge Dr. Millar to attempt to obtain this vaccine for the same distribution pattern as will be used for the other vaccines in the mass immunization program.
4. That the Connecticut State Medical Society issue a press release expressing its concern and its willingness to help.

Finally, the Council VOTED to comply with a request of the Deputy Commissioner of the State Health Department that one or more qualified members be appointed to serve on an "Advisory Committee on Swine Virus Influenza Vaccination Program," and directed the Chairman to appoint two members of the Society to represent the Society on said Advisory Committee. The Committee is scheduled to hold its first meeting at the State Health Department, Hartford, on Wednesday, June 9, at 1:00 p.m. Copies of Dr. Freedman's report will be sent to the members of the Committee on Public Health.

Report and Discussion of Journal Matters—The Editor

J. Alfred Fabro, Journal Editor, reported verbally on and discussed a number of matters having to do with the publishing of "Connecticut Medicine." He noted the rising costs of paper and printing, the arrangements he hopes to conclude with an advertising agent, the subsidized publishing of articles (such as those submitted by the Commission on Hospitals and Health Care), etc. He indicated that he would be taking up some of these matters more definitively with the Advisory Subcommittee on Publications. He made one recommendation, concerning the publication of a special supplement on the history of medicine, which the Council approved.

Request to Form CSMS Medical Student and Intern-Resident "Business Sessions"

It was VOTED to refer to the Subcommittee to Study and Revise the Bylaws, for evaluation and report to the Council, a recommendation of the AMA House of Delegates (Honolulu meeting) that state medical societies set up "business sessions" for medical student and intern-resident members of CSMS, possibly to include non-members as "affiliates" of the Society. It is anticipated that such state society "sessions" would be modelled more or less after similar "sessions" set up by the AMA in 1972, and that their establishment would lead to state "sessions" representatives attending the AMA counterpart meetings.

Report on the Strike of Nurses at Windham Memorial Hospital

William A. Whalen, WCMA Councilor, presented a comprehensive report on the nurses' strike at the Windham Memorial Hospital which has been in progress for several weeks and the settlement of which does not appear imminent. He noted that contract negotiators for the nurses (non-supervisory) have been furnished by the Connecticut Nurses' Association and that the CNA has been recognized as a bargaining agency for employed nurses by nine of Connecticut's general hospitals.

After hearing Dr. Whalen's report and discussing it at length, the Council VOTED that the information and published materials received from Dr. Whalen be made available to the Committee on Hospitals, and that the Committee be charged with studying the dimensions of the problem (re statement on nurses' role) described by Dr. Whalen and informing the nine general hospitals involved, and warning the other twenty-five, of the Committee's assessment of said dimensions. This assessment is to be sent, by letter, to the senior elected officer of the medical staff of each hospital, by whatever title. In the same letter, the elected officer will be asked whether staff physicians serve on the hospital's board of trustees.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on May 19, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

In Memoriam

Buckhout, George A., Sr., Tufts College, 1935. Dr. Buckhout was a practicing internist in the Fairfield area since 1936, until his retirement. Dr. Buckhout served in the Army as a captain during World War II. He was medical director of the Van Doren Convalescent Home since its inception in 1955. He was a member of the Connecticut State Medical Society and the Fairfield County Medical Association, and a former secretary of the Bridgeport Medical Society. Dr. Buckhout died May 1, 1976, at the age of 72.

Liotta, Salvatore, Boston University, 1927. Dr. Liotta was a general practitioner in the New London area since 1953. He was a Captain in the Medical Corps of the U.S. Army from 1942-45. He was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Liotta died May 23, 1976, at the age of 77.

Meister, Louis, Long Island College Hospital, 1930. Dr. Meister was a general practitioner in the Litchfield area since 1949, until his retirement in 1949. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Meister died April 3, 1976, at the age of 76.

Oppenheimer, Kurt, University of Heidelberg, Germany, 1920. Dr. Oppenheimer was a general practitioner in the New London area since 1941. He was a former president of the medical staff at the W.W. Backus Hospital. Besides serving as president of the Backus medical staff, Dr. Oppenheimer was active in the American Heart Association and Planned Parenthood. He was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Oppenheimer died April 29, 1976, at the age of 79.

Welcome, New Members *(continued from pg. 498)*

TOLLAND COUNTY

Ghazi-Saidi Reza, Enfield

HARTFORD COUNTY

Abdel F. Allam, Bristol
Alfred L. Aronson, Hartford
George O. Babenco, Hartford
June G. Bae, Bristol
Helena Cihak, East Hartford
Dorothy C. Cinti, Hartford
Suresh H. Dhumale, Southington
Jehangir Durrani, Enfield
Harold B. Hawkins, Hartford
Katherine C. Ill, Plainville
Wing K. Lee, Hartford
Alvaro Oviedo, Hartford
Michael Passaretti, Manchester
Alexander S. Peck, Jr., Hartford
John H. Perkins, Hartford
Savita Puri, Farmington
Om P. Saini, Manchester
Howard R. Shapiro, Hartford
James D. Slavin, Jr., Hartford
Richard P. Spencer, Farmington
Nasim Toor, New Britain
Martin Wand, Hartford
Kenneth H. Wells, Hartford

FAIRFIELD COUNTY

James R. Beaudoin, Danbury
Alfred M. Bennett, Wilton
Nelson A. Bonheim, Greenwich
Albert R. Casazza, Danbury
Thomas D. Cocco, Bridgeport
Herbert G. Cohen, Danbury
Gerald M. DeBonis, Bridgeport
Michael Dogali, Bridgeport
Gregory R. D'Onofrio, Stamford
Michael E. Dubissette, Stamford
George R. Eckert, Newtown
Santiago Escobar, Bridgeport
Charles R. Feuer, Westport
Mel A. Forman, Stamford
Eric M. Garver, Bridgeport
Donald P. Granger, Bridgeport
Fereydoon Khoshnood, Stamford
Peter Kim, Stamford
Arthur Kotch, Danbury
Leon E. Luck, Westport
Shivayogi V. Magavi, Newtown
Kenneth J. Maiocco, Bridgeport
Ibrahim S. Masry, Danbury
Stuart W. McCalley, Greenwich
Mary Jane Morrison, Danbury
Martin Olanoff, Norwalk
John F. Pezzimenti, Danbury
John J. Poutas, Old Greenwich
William J. Rockwell, Bridgeport
Daniel G. Salvio, Bridgeport
Stanley Saperstein, Danbury
K. N. Senathirajah, Bridgeport
Edward C. Sheppard, Westport
John R. Simses, Bridgeport
Barbara E. Sullivan, Bridgeport
Guy E. Torstenson, Westport
George L. Van Der Aue, Bridgeport
Harvey F. Wachsman, Sandy Hook
Jesus F. Yap, Jr., Darien
Michael R. Zales, Greenwich
Charles Zigun, Fairfield

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli, Klebsiella-Aerobacter, Staphylococcus aureus, Proteus mirabilis,* and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note: Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G.I. disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute, painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists, causes other than infection should be sought. After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.

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▪ **Dosage for Vertigo***—The usual adult dosage for Antivert/25 is one tablet t.i.d.

BRIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

Effective: Management of nausea and vomiting and dizziness associated with motion sickness.

Possibly Effective: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

Usage in Children: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

Usage in Pregnancy: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

All of the opportunities for practice and the availability of candidates for placement in Connecticut were updated during June 1976. At the time this material went to press inquires were being processed from physicians who will be available for placement in Connecticut during 1977. The limitation of space prevents the publication of these names all at one time. Individuals or institutions wishing information on candidates are urged to call the Physician Placement Service.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Family Practice: 28 year old physician presently in practice in Canada wishes to come back to his native state. Eligible for Conn. license. Yale graduate. M.D. from McGill. Internship at St. Mary's Hospital, Montreal. Solo or group practice in medium or small sized community. William J. Waldman, M.D., 51 Oakwood Crescent, Pincourt, Quebec, Canada.

Internal Medicine (Nephrology): Available July 1976. Board eligible. Completing Fellowship in Renal Diseases at Rhode Island Hospital (Brown University), Providence, R.I. Hari K. R. Bhasin, M.D., 1145½ Hartford Avenue, #1C, Johnston, RI 02919.

Internal Medicine: Available July 1976. Board certified by ABIM. Board eligible in gastroenterology. Fully trained in endoscopy, polypectomy, hepathology and GI radiology. Completing fellowship at Mt. Sinai in NYC. 30 years old. Complete CV on file at CSMS. (P.H., M.D.)

Internal Medicine: Available now. Completed rotating residency at St. Mary's Hospital, Waterbury. Connecticut license. Vincent Ippolito, M.D., Hover Avenue, Germantown, NY 12526.

Internal Medicine (Cardiology): Available now. FLEX. Board certified by ABIM. Group or institutional practice. Resume on file at CSMS. S.K. M.D.

Internal Medicine (Hematology-Oncology): Available with short notice. Board certified. Group or associate practice desired. Thomas Twele, M.D., E-5 Oxford Towne Apts., New Hartford, NY 13413.

Internal Medicine (Nephrology-Hypertension): Board certified. M.D. from Columbia. Trained at Dartmouth-Hitchcock. Presently employed at VA Hospital in Charleston, S.C. while husband, a general surgeon, completes Navy duty. Candace Cooper Walworth, M.D., 936 Tall Pine Road, Mt. Pleasant, SC 29464.

Internal Medicine (Cardiology): 37 years old. Board eligible. FLEX. Fully trained in non-invasives, VCG, FCG, EKG, stress testing, pacemakers, echo, CCU, ICU. Available July 1976. Connecticut license. Completing program at St. Vincent's in Bridgeport. Resume on file at CSMS.

OB/GYN: Available Spring of 1977. M.D. from University of Illinois. Trained at Johns Hopkins and St. Lukes in Chicago. Board eligible. Presently in the Army at Fort Bragg. Solo or group practice. Terrence J. Horrigan, M.D., 432 Hallmark, Fayetteville, NC 28303.

ENT: Available September 1976. Connecticut license pending. Board certified. Completing duty with U.S. Army in Germany. Enjoys outdoor activities. Desires solo, group or associate practice in medium sized community. M.D. from Upstate Medical Center at Syracuse. Completed residency at University of California in San Francisco. Resume on file at CSMS.

Pediatrics: Took FLEX in Conn. in June. Desires institutional position. Wife is an RN. Trained in Taiwan. Presently with the Pediatrics Department of Hahnemann Medical College and Hospital, Philadelphia. George Li., M.D., 5818 N. 13th Street, Philadelphia, PA 19141.

Pediatrics: Connecticut license. Board certified. Available October 1976. Completed training at St. Raphael's in New Haven. Several years experience in clinics in the New Haven area. 39 years old. Desires group or institutional setting. C.V. on file at CSMS.

Surgery (Cardiovascular-Thoracis): Board certified in general surgery. Board eligible in thoracic surgery. Connecticut license. Available immediately. Wishes to locate permanently in Connecticut community. Complete resume on file with CSMS.

Surgery (General): Available now. Board eligible. FLEX. Group or institutional practice. Wife has completed 3 yr. residency in anatomical pathology. Chandy Samuel, M.D., 408 Prospect Avenue, Syracuse, NY 13203.

Emergency Room Physician: Available July 1976. Completing three year program at the Sinai Hospital in Southfield, Michigan. Graduate of the University of Buenos Aires in Argentina. 28 years old. FLEX. Michigan License. Mario A. Roskind, M.D., 22307 LaSeine, Southfield, MI. 48075.

Occupational or Institutional Medicine: Connecticut license. Wishes to return to general medicine. Graduate of N.Y. Medical College, 1964. Board eligible in opthalmology. Complete resume available at CSMS.

Internal Medicine: Available September 1976. National Boards. Board eligible. Columbia University; University of Michigan, M.D.; Internship and residency at Beth Israel Medical Center, N.Y.C. Prefers southwestern Connecticut in solo, group or associate practice. Charles R. Rethy, M.D., 353 E. 17th Street, N.Y.C., NY 10003.

OB/GYN: Board eligible. FLEX. Solo, group or associate practice, 35 years old. Completed US training at Queens General Hospital in New York and Medical College of Philadelphia. Available July 1976. AE/OB, c/o CSMS.

Orthopaedics: Available November 1976. FLEX. Board eligible. Desires solo practice in medium or small community. Presently in practice. Fellowship training in Boston and Milton, Mass. A. Malik Arain, M.D., 21 Hawthorne Woods, Deptford, NJ 08096.

Pediatrics (Clinical Genetics): Interested in birth defects-genetic counseling clinic. Board eligible. Available January 1977. MD from Jefferson Medical College, Philadelphia. Presently on fellowship at Children's Centre in Winnipeg. 32 years old. Completed military service. John T. Martsolf, M.D., 307-671 William Avenue, Winnipeg, Manitoba, Canada R3E0Z2.

Pediatrics: Available July 1976. Board eligible. Passed National Boards. Entire medical training at University of Michigan Medical Center. Desires group or associate practice. Resume on file with CSMS.

Psychiatry: Connecticut license. Presently in practice. Available part-time in the greater Stamford area. Resume on file with CSMS.

Radiology: Board certified in radiology. Board eligible in nuclear medicine. Connecticut license. Trained in Ireland. Available after July 1976. Prefers medium sized community. Solo or group practice. 56 years old. Trained at Lahey Clinic in Boston, 1956-59. Has had experience in general practice in Newfoundland. Henry Dominick Wilson, M.D., Merlin Park Hospital, Calway City, Ireland.

Surgery (General): Available now. Board eligible. FLEX. Special interest in vascular surgery. Trained at St. Peter's Hospital in Albany 1969-72. Boston City Hospital 1972-76 on fellowship. S. Anurshetru, M.D., 173 Pleasant Street, Melrose, MA. 02176.

Surgery (General): Presently on active duty. Board eligible. Available July 1976. 33 years old. M.D. from University of Rochester. Internship and residency at Bellevue-NYU. Group practice in medium sized community. Resume on file with CSMS.

Surgery (General-Vascular): Available July 1976. Licensed in N.Y. and N.J. Board eligible. S. Kumar Dash, M.D., 410 Prospect Street, Apt. 3B, East Orange, NJ 07017.

Surgery (General): Available September 1976. Board eligible. Completing training at Montefiore Hospital 1972-76. M.D. from University of Rochester. Internship at Jacobi Hospital, N.Y.C. Associate type practice desired. Barry N. Haicken, M.D., One David Lane, Yonkers, NY 10701.

Surgery (General and Peripheral Vascular): Available July 1976. Board eligible. FLEX. Trained in Albany, N.Y. and Dayton, Ohio. 41 years old. Graduate of Cairo University, Egypt. S.F. Nicola, M.D., 1208 W. Fairview, Dayton, O. 45406.

Surgery (Thoracic and Cardiovascular): Available July 1976. Board eligible. Prefers larger community. M.D. from Medical College of Wisconsin. Trained at Tufts and Temple Medical Centers. Godfrey C. Pinder, M.D., 220 Locust Street, Philadelphia, PA. 19106.

Urology: Board eligible. Solo, group or associate practice in medium or small community. Available July 1976. M.D. from University of Kentucky 1969. Trained at University of Illinois and McGill University. Complete military service. Edward Salmon, M.D., 4343 Graham Drive, Pierrefonds, Quebec, Canada H9H2B9.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Medical Director of University Health Service: Part time, Internist, Family practitioner. Connecticut license needed. Supervise overall program with adequate staff and administrative assistant. More details available from CSMS or from Personnel Services, University of Hartford, 200 Bloomfield Avenue, West Hartford, Conn. 06117. Beginning on August 15, 1976. Salary range: $15,000 - $18,000.

Physical Medicine and Rehabilitation: Northeastern sector of the state can use a physiatrist. Details available from CSMS.

Emergency Room: Contact Chief of E.R., Bridgeport Hospital, Bridgeport, CT. 06602.

Family Practice: Town of East Windsor needs a practitioner urgently. Medical office with practice available. No fee, reasonable rent. Call 203-623-4564 or write Maurice A. Bourquin, President, M.A.B. Machine Corp., Box 338, Broad Brook, CT.

Internal Medicine: State hospital requires physician for medical work up of patients. Support staff of five physicians. Details from CSMS.

Internal Medicine: Part time. Alcohol treatment center. Contact Paul Errera, M.D., V.A. Hospital, West Haven, CT. 06516.

Allergy: Established practice available. Physician wishes to retire fall of 1976. Excellent opportunity for beginning practitioner or one desiring to relocate. Irving Uvitsky, M.D., 3101 Main Street, Bridgeport, CT. 06606.

Director of University Health Service: Wesleyan University is seeking a physician to coordinate the delivery of primary care to a coeducational population of 2400 students. Contact Dean of the College, Wesleyan University, Middletown, CT 06457.

Family Practice: Associate needed to join a solo practitioner in very active practice. Ideal location on the Connecticut coast. Morris Sulman, M.D., 203 Montauk Avenue, New London, CT 06320.

Emergency Room Physician: A modern hospital located in Putnam, Ct. 45 minutes from Providence, Hartford and Worcester. Full time, competitive salary, liberal benefits. Connecticut license required. Call collect (203) 928-6541, Mr. Charles F. Schneider, Executive Director, Day Kimball Hospital, 320 Pomfret Street, Putnam, Connecticut 06260.

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Coronary Artery Surgery—Past, Present and Future

Need for Randomized Trial

Lawrence S. Cohen, M.D., Guest Editor

It is estimated that more than 5 million individuals in the United States, many between the ages of 40 and 59 years, have obstructive coronary artery disease. Moreover, it is estimated that there are more than 140,000 to 200,000 new cases of angina pectoris each year and that more than 500,000 deaths per year are directly attributable to coronary disease.[1, 2] These figures truly represent an epidemic. Faced with the stark statistics of this epidemic it is natural for physicians to seek effective means of curbing the carnage.

Currently, more than 400 hospitals in the United States have cardiac surgical programs and an estimated 150,000 coronary artery surgical procedures could be carried out annually. Before committing ourselves and our patients to a surgical approach, it would be profitable to review what is known about the natural history of patients with coronary artery disease and to assess the impact of both medical and surgical therapy upon quality of life and survival.

Studies of the natural history of angina pectoris have been reported for the past 50 years. Many of these early reports suffered from an inadequate diagnostic base so that some patients included in the study did not have coronary obstructive disease. Similarly, the period of follow-up was often too brief, skewing the data toward an apparent bad prognosis as those individuals who died early after entry into the study heavily influenced the statistical analysis. One of the signal studies performed in the first half of this century was that of Dr. Paul Dudley White and associates who followed some 456 patients with angina pectoris for up to 25 years. These investigators reported approximately a 4 per cent annual mortality in patients developing the anginal syndrome.

The development of coronary arteriography allowed some very important refinements to be introduced into the science of prognostication. First, patients with chest pain due to causes other than coronary obstructive disease could be excluded from analysis. Second, the thesis that the severity and extent of coronary narrowing might be related to prognosis could be tested. Friesinger, Page and Ross[4] published a signal study in 1970 correlating angiographic coronary anatomy with mortality. Other studies[5, 7] confirmed their findings. In the excellent review by Reeves[8] it is pointed out that patients studied because of angina pectoris have a 2.2 per cent annual mortality if one coronary artery is severely stenotic, a 6.8 per cent annual mortality if double vessel disease is present and an 11.4 per cent annual mortality if triple vessel disease is present.

The surgical approach to the patient with obstructive coronary disease dates back almost fifty years when several operations were developed by Dr. Claude Beck. The prototype of this type of operation was pericardial poudrage.[9] The next milestone in coronary artery surgery was

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LAWRENCE S. COHEN, M.D., Professor of Medicine and Chief of Cardiology, Yale University School of Medicine.

the innovative work of Dr. Arthur Vineberg who developed the internal mammary implant operation.[10] Other operations were devised but the danger of uncontrolled and uncritically assessed operations was pointed out when the internal mammary artery ligation procedure was found to give the same results as a sham procedure.[11]

In 1967, the reversed saphenous vein aorta to coronary artery bypass operation was developed by Favalaro and co-workers[12] at the Cleveland Clinic and by Johnson and co-workers[13] in Milwaukee. Although nine years have passed since the introduction of coronary artery bypass procedures and over 125,000 patients have undergone operation, there is still no clearcut consensus about the role of surgery in coronary artery disease. It is generally agreed that the patient with intractable angina pectoris unresponsive to medical therapy is probably helped symptomatically and possibly improves his prognosis by operation. Similarly, it is generally agreed that symptomatic patients with high grade left main coronary artery lesions are also helped by operative intervention.

The largest group of patients who might be potential candidates for coronary bypass procedures is the group with Class 2 angina. An early randomized trial of 100 such patients showed no difference in survival in surgically or medically treated patients although symptomatic relief was superior in the surgically treated patients.[14] Similarly, there is still no uniform agreement concerning whether patients who have survived a myocardial infarction might have a better prognosis if operated upon with bypass procedures after their period of convalescence.

In 1972, the National Heart and Lung Institute established an Ad Hoc Advisory Board on Coronary Artery Surgery to evaluate the need for a study of coronary artery surgery as practiced in the United States. In its report (August 31, 1972), the Board recommended a program of collaborative randomized prospective studies comparing coronary artery surgery with medical management in two sharply defined subsets of patients: 1) the patient with stable Class 2 angina pectoris, and 2) the patient who has recovered from a myocardial infarction.

The Yale University School of Medicine was selected as one of the 13 centers in this country to participate in this randomized trial. Patients with Class 2 angina or patients who have recuperated from a myocardial infarction will be given the opportunity to enter the study and to undergo randomization into either a medical or a surgical group. Ethically since neither form of therapy has yet to be shown to be superior to the other, the randomization process represents an example of the highest physician-patient professional relationship. In a larger sense, since potentially 150,000 patients a year at a cost of close to one billion dollars might potentially be considered for operation, it is incumbent upon the medical and surgical community to perform this randomized study so that the efficacy or lack of efficacy of this operation may be established. The mistakes of our predecessors in not objectively assessing medical or surgical procedures will come back to haunt us if we fall victim to the seductive charms of following our intuitive senses.

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Noninvasive Radionuclide Imaging in the Patient with Cardiovascular Disease

Harvey J. Berger, B.A., Gerald S. Freedman, M.D., and Barry L. Zaret, M.D.

Introduction

During the past five years, the role of nuclear medicine in cardiovascular diagnosis has grown dramatically. Early studies focused on evaluation of cardiomegaly and pericardial effusion[1] and congenital abnormalities.[2] Recent advances in instrumentation, radiopharmaceuticals, and relatively simple computer technology permit application of new imaging approaches to the heart. The widespread clinical utilization of these noninvasive methods has been somewhat limited because of the need for close collaboration between the cardiologist and nuclear physician. Other limiting factors are the cost of instrumentation, the complexity of federal licensing regulations governing human use of radionuclides, and the cost and restricted availability of certain radioisotopes. However, ongoing widespread evaluation of these techniques in cardiac patients has demonstrated their feasibility and clinical relevance. These demonstrations have augmented clinical interest in these approaches and have fostered a more broad-based clinical application in patients with cardiac disease. As present techniques are validated and standardized, newer approaches will undoubtedly be developed.[3,4]

Nuclear imaging offers two significant advantages over other more conventional diagnostic approaches. First, it is essentially noninvasive, requiring only intravenous injection, thus posing minimal risk to the patient. Second, the information generated presents physiologic insights which often cannot be obtained in other ways. For example, while coronary angiography provides specific evidence of coronary arterial anatomy, nuclear imaging evaluates regional myocardial blood flow and perfusion, as well as myocardial viability, necrosis, infarction, and scar.

Noninvasive cardiovascular radionuclide techniques fall into two general categories. The first group deals with an evaluation of cardiac function and performance through the use of tracers which remain in the intravascular space during the period of study. The second group evaluates myocardial blood flow, perfusion, and viability (myocardial perfusion imaging and acute myocardial infarction imaging). The latter group of studies employ radionuclides which are taken up by either normal or necrotic myocardial cells. A summary of the different techniques is shown in Table 1.

The equipment necessary to undertake cardiac radionuclide studies is available in most nuclear medicine departments. Standard scintillation cameras, which are used for non-cardiac imaging studies, often can be employed in the cardiac procedures described. Access to the cardiac patient can pose problems, particularly when the patient is in acute care areas. The approach used at the Yale-New Haven Hospital has been to place a stationary scintillation camera* in the coronary care unit and dedicate this instrument to the study of both acute and stable cardiac patients. However, portable gamma cameras similar to their larger stationary counterparts are becoming increasingly available and will be improved further during coming years. These instruments allow nuclear imaging and quantitative studies to be carried out at the bedside for only a portion of the day, while for the remainder, they are available for other non-cardiac studies.[5]

The only equipment specific to cardiopulmonary studies is the physiologic synchronizer needed to perform electrocardiographic gated cardiac blood pool imaging. This is available at relatively low cost. Computer systems, either dedicated to data analysis of nuclear medicine studies or for general purposes, are found in many hospitals today and can readily be adapted to both cardiac and noncardiac data interpretation and storage.

In addition to the non-invasive studies outlined, several invasive techniques designed to study regional myocardial blood flow and perfusion at the time of cardiac catheterization by intracoronary injection of xenon-133 or radiolabelled particles have been proposed. These methods are outside the scope of this review, and this report will stress recent developments in noninvasive cardiac radionuclide techniques.

Cardiac Performance and Function Studies

Using the gamma scintillation camera, the passage of an intravenous radionuclide bolus through the cen-

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Table 1

NONINVASIVE CARDIOVASCULAR RADIONUCLIDE TECHNIQUES

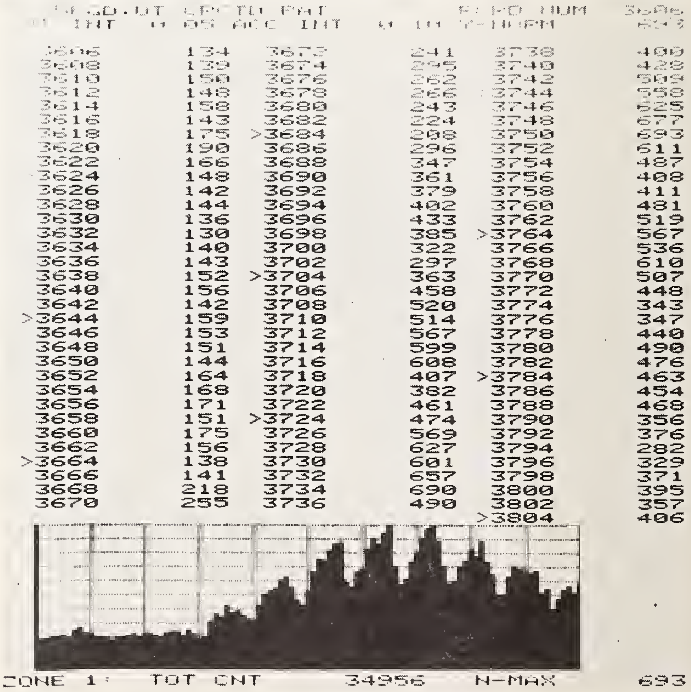
Technique	*Preferred Radionuclide*	*Use*
A. *Cardiac Function & Performance Imaging*		
1) First pass	Technetium-99m pertechnetate	*Qualitative:* Valvular lesions, intracardiac shunts, congenital abnormalities *Quantitative:* Shunts, ejection fraction, regional wall motion, cardiac output, pulmonary blood volume
2) Cardiac blood pool	Technetium-99m Human Serum Albumin	*Qualitative:* Cardiomegaly, pericardial effusion *Quantitative* (Gated): Ejection fraction, regional wall motion, ventricular volumes
B. *Myocardial Perfusion Imaging*		
1) Rest	Thallium-201	*Qualitative:* Myocardial infarction and scar, cardiomyopathy (IHSS) *Quantitative:* Segmental contraction abnormalities, infarct size (?)
2) Exercise	Thallium-201	*Qualitative:* Myocardial ischemia (reversible)
C. *Acute Myocardial Infarction Imaging*	Technetium-99m pyrophosphate	*Qualitative:* Acute myocardial infarction *Quantitative:* Infarct size (?)

tral circulation can be monitored. In its simplest form, this technique allows visualization of the cardiac chambers and great vessels with respect to structure, size, and position. In patients with congenital heart disease, septal defects, coarctation, transposition of the great vessels, tetralogy of Fallot, and other anatomic abnormalities can usually be well defined.[2] Qualitative detection of intracardiac shunts can also be obtained using serial scintiphotos or pulmonary dilution curves, which clearly separate normal patients from those with shunts. In patients with acquired heart disease, valvular lesions or aneurysms can often be detected. Specific anatomic scintigraphic criteria have been proposed for several abnormalities.[2]

To quantitatively evaluate intracardiac shunts, the data from the gamma camera are interfaced with a computer system. Time-activity curves are generated from regions of interest over the cardiac chambers and lungs to allow detection of surgically significant right-to-left or left-to-right shunts.[6]

The first-pass radionuclide angiocardiogram can also be used to evaluate cardiac performance. After bolus injection in a peripheral vein, the gamma camera interfaced to a computer can be used to determine left ventricular ejection fraction[7,8] and regional wall motion.[8] Precordial activity is recorded at high speed. Changes in radioisotopic activity over the left ventricle are assumed to correspond to changes in ventricular volume during the cardiac cycle. The peaks represent counts at end-diastole and valleys end-systole (Figure 1). From such a curve, a representative cardiac cycle can be generated by summing several individual beats. Ejection fraction is determined from the end-diastolic counts minus end-systolic counts divided by end-diastolic counts. Additional measurements obtained from the first-pass study allow calculation of cardiac output, total blood volume, pulmonary blood volume, and left-ventricular end-diastolic volume.[9]

An alternative approach to assessment of cardiac performance is gated cardiac blood pool imaging. Using the electrocardiogram as a physiologic signal, data can be obtained at selected portions of the cardi-



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  3606      134   3672      241   3738      400
  3608      139   3674      295   3740      428
  3610      150   3676      262   3742      509
  3612      148   3678      266   3744      558
  3614      158   3680      243   3746      625
  3616      143   3682      224   3748      677
  3618      175  >3684      208   3750      693
  3620      190   3686      296   3752      611
  3622      166   3688      347   3754      487
  3624      148   3690      361   3756      408
  3626      142   3692      379   3758      411
  3628      144   3694      402   3760      481
  3630      136   3696      433   3762      519
  3632      130   3698      385  >3764      567
  3634      140   3700      322   3766      536
  3636      143   3702      297   3768      610
  3638      152  >3704      363   3770      507
  3640      156   3706      458   3772      448
  3642      142   3708      520   3774      343
 >3644      159   3710      514   3776      347
  3646      153   3712      567   3778      440
  3648      151   3714      599   3780      490
  3650      144   3716      608   3782      476
  3652      164   3718      407  >3784      463
  3654      168   3720      382   3786      454
  3656      171   3722      461   3788      468
  3658      151  >3724      474   3790      356
  3660      175   3726      569   3792      376
  3662      156   3728      627   3794      282
 >3664      138   3730      601   3796      329
  3666      141   3732      657   3798      371
  3668      218   3734      690   3800      395
  3670      255   3736      490   3802      357
                                 >3804      406

ZONE  1:    TOT CNT         34956     N-MAX          693
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Figure 1

Left ventricular time-activity curve in a patient without cardiac disease. Each peak and valley defines one cardiac cycle; the peaks respresent end-diastolic counts and valleys end-systolic counts. The numbers above refer to actual frame numbers at 0.05 second intervals (first column) and to counts (second column).

ac cycle. By summing over 200-300 beats, gated scans at end-diastole and end-systole are generated.[10] Using analyses developed for ventricular volume determination from the contrast angiogram, ejection fraction and ventricular volumes can be calculated. Regional wall motion can be determined by comparing the end-diastolic and end-systolic images.[11] In these studies it is essential that the radionuclide used remains in the intravascular space (Table 2). Gated blood pool imaging has been used in sequential evaluation of patients with acute myocardial infarction[12] and suspected left ventricular aneurysm.[13] This technique was found useful in differentiating patients with localized left ventricular aneurysms from those with generalized left ventricular hypokinesis. As shown in Figure 2, the gated scans clearly delineate the presence and location of the aneurysm and the resolution following aneurysmectomy.

Table 2

RADIONUCLIDES CURRENTLY AVAILABLE FOR CARDIAC STUDIES

Radionuclide	*Physical Half Life (Hours)*	*Usual Dose (mCi)*	*Use*
Technetium-99m Human Serum Albumin	6.0	10-20	First pass angiocardiogram and cardiac blood pool imaging
Technetium-99m pertechnetate	6.0	10-15	First pass angiocardiogram
Indium-113m (bound to serum transferrin *in vivo)*	1.7	3-5	Cardiac blood pool imaging
Thallium-201	74.0	1.5-2.0	Myocardial perfusion imaging (rest and exercise)
Technetium-99m Stannous Pyrophosphate	6.0	15	Acute myocardial infarction imaging

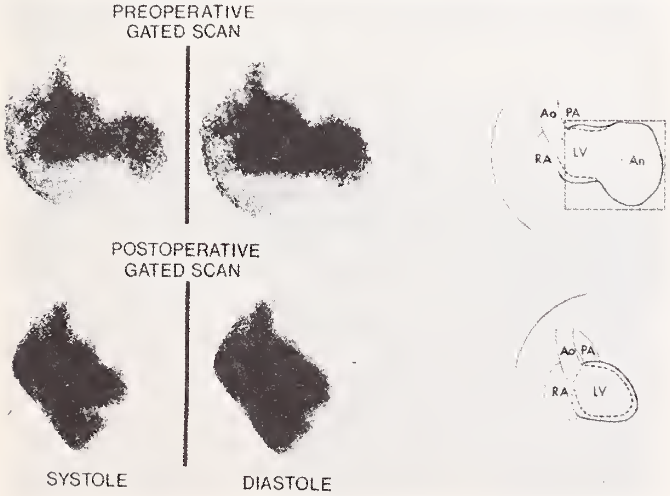

Figure 2

Gated cardiac blood pool scans in the anterior projection performed in a patient with a large anterior wall left ventricular aneurysm (top) and following aneurysmectomy (bottom). Ao = Aorta; LV = left ventricle; PA = pulmonary artery; RA = right atrium; AN = aneurysm. Reproduced from reference (13) by permission of the American Heart Association, Inc. and the authors.

There has been excellent correlation of data obtained from radionuclide assessment of cardiac performance and that obtained by contrast angiography.[7,8,10,11] The noninvasive radionuclide methods for evaluation of cardiac performance allow for safe and sequential study of critically ill patients. They also may serve for screening and followup of different patient groups.

Myocardial Perfusion Imaging

Knowledge of regional myocardial perfusion in the patient with coronary artery disease would be extremely useful. Imaging with radioactive monovalent cations provides a means of localizing areas of acute infarction, remote infarction (scar), and transient ischemia (viable). After intravenous injection, radioactive potassium or its analogs (rubidium and thallium) concentrate in myocardium in proportion to regional myocardial blood flow and myocardial cation extraction. Peak myocardial concentration of these radionuclides is usually within ten minutes of injection. Although most original studies were done with potassium-43, the radionuclide of choice today is thallium-201.[14] Images can be obtained on the newer generation scintillation cameras despite the low 80 KeV photopeak. Thallium-201 has the advantage of a 3 day physical half life which provides a moderate shelf life, but this has the disadvantage of limiting sequential studies.

In many patients with significant coronary artery obstruction, areas of decreased radionuclide concentration are usually not found at rest. This occurs because myocardial regions supplied by stenotic arteries are usually adequately perfused either antegrade or through vessels distal to the stenosis. Only when myocardial oxygen demand exceeds supply will regional ischemia result. Thus, when the radionuclide is injected during cardiac stress, such as controlled exercise, relative decrease in regional isotope concentration becomes evident.[15] In this setting, the transiently ischemic myocardium can be demonstrated as a "cold spot." Areas of decreased potassium-43 concentration following exercise were correlated with the regional location of myocardium supplied by stenotic coronary arteries.[15]

The radionuclide is injected at the peak exercise load attained. It is rapidly extracted from the blood by the perfused myocardium during ischemia. Myocardial images obtained following exercise at rest represent the distribution of radioisotope during the imbalance between myocardial oxygen supply and demand.

The normal thallium-201 myocardial image is homogeneous throughout. The anterior wall, apex, and inferior wall are clearly delineated in the anterior view. The septum and postero-lateral wall are best visualized in the left anterior oblique view (Figure 3). Following exercise, hepatic, splenic and gastric uptake are minimized due to redistribution of cardiac output. With thallium-201, right ventricular myocardium is often seen. Currently, interpretation of perfusion images is qualitative for the most part and depends on visual evaluation.

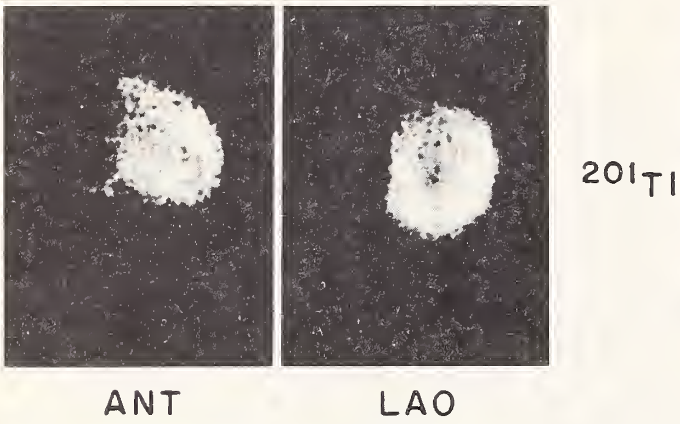

Figure 3

Normal thallium-201 (^{201}Tl) myocardial image in the anterior (ANT) and left anterior oblique (LAO) projections, with tracer injected during maximal bicycle exercise in a young athlete with atypical chest pain. ^{201}Tl uptake (white areas) is homogeneous in both left and right ventricular myocardium. There is no evidence of myocardial ischemia.

The technique of potassium analog myocardial imaging at rest and after exercise has been found of use in evaluating the results of coronary artery bypass surgery[16] and patients with a false-positive electrocardiographic response to exercise.[17] Recent studies indicate that thallium-201 imaging during stress is significantly more sensitive than electrocardiographic stress testing alone in detecting myocardial ischemia.[14] False positive images are seen in patients with left bundle branch block and cardiomyopathies.

In patients with myocardial infarction, regions of scar appear as "cold spots" at rest in thallium-201 images. Areas of acute necrosis also are seen as "cold spots" immediately after infarction (Figure 4.) The sensitivity of thallium-201 in detecting myocardial infarction is presently under widespread investigation. Results from preliminary studies[14] indicate that thallium-201 perfusion imaging reliably identifies the presence and location of transmural infarction; subendocardial infarction is detected less accurately. Further support for the potential usefulness of imaging following myocardial infarction was obtained in a quantitative study of patients with previous infarction. The size and location of the potassium-43 defect at rest was found to correlate well with the measured amount of ventricular circumference that was akinetic on the ventriculogram.[18]

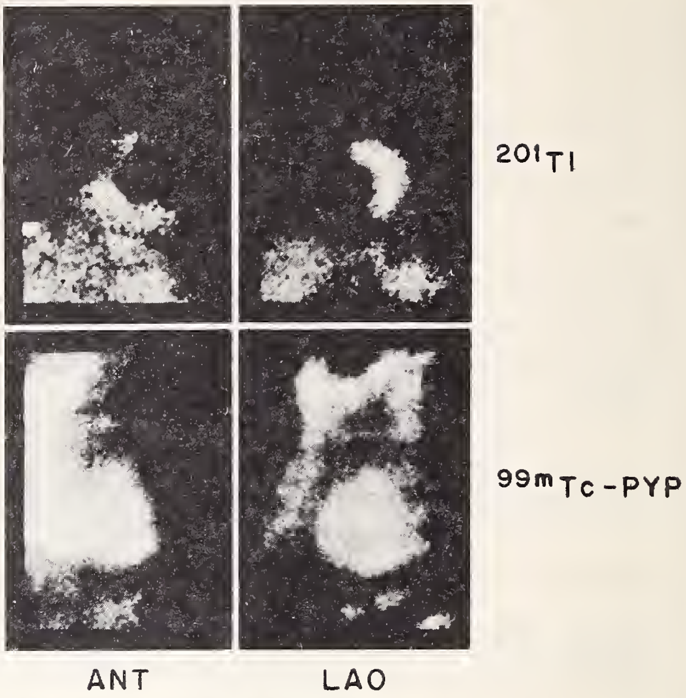

Figure 4

Thallium-201 (^{201}Tl) (top) and technetium-99m pyrophosphate (99m Tc-PYP) (bottom) myocardial images sequentially performed in the coronary care unit in a patient with an acute antero-septal myocardial infarction. Note the perfusion defect ("cold spot") in the anterior (ANT) view of the ^{201}Tl image and the area of decreased septal perfusion in the left anterior oblique (LAO). Hepatic uptake is seen below the heart on the left side of each view. A large area of abnormal 99m Tc-PYP activity ("hot spot") is evident in the anterior wall. Normal uptake of the tracer is seen in the sternum on the left of the ANT image, as well as in the vertebrae and ribs on the right of the LAO.

Unfortunately, none of these techniques using radioactive monovalent cations currently allow differentiation between acute and remote infarction (Table 3). This separation can be made with tracers that are selectively taken up by acutely necrotic tissue (vida infra).

Table 3

COMPARISON OF "HOT SPOT" AND "COLD SPOT" IMAGING IN MYOCARDIAL INFARCTION

	Potassium Analogs ("Cold")	*Infarct Avid ("Hot")*
Duration of Abnormality	Immediately	12 hours - 7 days
Maximal Abnormality	< 24 hours	24-72 hours
Detection of Old vs. New Abnormality	No	Yes
Abnormality due to ischemia	Yes	Under investigation
Specific for Clinical MI	No	No
Sensitive for all types of MI	Probably No	Yes
Noncardiac uptake	Liver, spleen, stomach, kidney	Bone

Acute Myocardial Infarction Imaging

In this technique, areas of acute myocardial infarction show up as "hot spots." Original clinical studies were performed using technetium-99m (Sn) tetracycline.[19] This tracer has several drawbacks including delayed blood clearance and significant hepatic uptake and has been abandoned. The most experience to date has been with technetium-99m pyrophosphate (the bone scanning agent).[20] Optimal imaging results 24-48 hours after infarction. Although significant radioactivity is seen in the ribs overlying the heart, this usually does not prevent interpretation. This technique is highly sensitive for detecting acute transmural myocardial infarction, which is seen as a well-localized "hot spot" (Figure 4). The specificity of this method is significantly lower, and false-positive images often are seen in patients with unstable angina pectoris. The sensitivity of pyrophosphate imaging in detecting subendocardial infarction is not as good as for transmural infarcts.[21] Images show a less intense and poorly localized radionuclide uptake.

Summary

Several radionuclide procedures allow noninvasive evaluation of cardiac performance, regional myocardial perfusion, and detection of myocardial infarction. Radionuclide angiocardiography, combined with "hot spot" and "cold spot" imaging provide a broad assessment of cardiac function. However, it is important to remember that these techniques are still relatively new and clinical applicability will necessitate further investigation. Additional advances in radiopharmaceutical development and instrumentation improvement certainly will be forthcoming. Even in light of these limitations, a great deal of clinically relevant data can be obtained today.

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A Realistic Appraisal of What Echocardiography Can Deliver: Rational Guidelines for Clinical Use

Allan M. Ross, M.D.

There have been numerous reports, monographs, textbooks, courses and seminars on the value of echocardiography in the practice of adult medicine.[1-4] The deluge of information has included highly relevant and clinically useful statements as well as equally enthusiastic reporting of nearly inconsequential observations. Unfortunately, the non-echocardiographer lacks the particular personal experience to differentiate the two and therefore cannot always make best use of this powerful diagnostic tool.

This review is designed to offer a practical perspective as to where a clinically important procedure should be used, where it can occasionally be of value, and where it is of limited use at best. It is not unbiased, but its bias is that generated by clinical realities. These include frustrations as well as satisfactions, as opposed to the usual approach, that of unbridled proponent exuberance. Some of the observations to follow cannot be referenced to the general literature but come of echo and cardiac catheterization correlations made over a five year period in our own laboratories. In some cases this experience is acknowledged to be somewhat at odds (in terms of sensitivity or specificity) with what has generally been written.

This material is organized on three levels. The text approaches the echo as a laboratory study with reasonably well defined indications. It emphasizes clinical situations, not echocardiographic phenomena. This is followed by Appendix I, which details specific lesions and measurements, categorizing them by relative echocardiographic reliability. Lastly, Appendix II provides a look at the next generation of echo technology, the goal of which is to expand the value of ultrasound into cardiologic problems for which current techniques are less than excellent.

When Echocardiography should be requested in the office practice of adult medicine

In Evaluating Heart Murmurs:

Not every heart murmur requires study beyond history, chest x-ray and ECG. It is not the purpose of this review to discuss which characteristics of a heart murmur in asymptomatics may prudently be followed without a certain etiologic diagnosis. Suffice it to say that if in doubt, the clinician is justified in early application of other safe, non-invasive diagnostic procedures.

A carefully performed echo is of major value in demonstrating mitral stenosis, idiopathic hypertrophic subaortic stenosis (IHSS), aortic regurgitation (AR) and prolapsing mitral leaflet ("floppy valve"). That we consider the tool less sensitive or specific for some other major causes of a murmur (see Appendix I) does not detract from the recommendation that ultrasound be employed routinely in the diagnostic workup. On many occasions, lesions for which we consider the echo less than excellent will nonetheless be recognized, and almost always the differential diagnosis list will at least be reduced by the certain exclusions that a normal study affords.

It should be noted here that the ability of echo to confirm a lesion is not necessarily equal to its ability to exclude it. For example, a perfectly normal aortic echo virtually excludes significant valvular aortic stenosis (AS), whereas an abnormal study, due to a variety of technical factors, is not necessarily specific for A.S. In the case of some abnormalities (aortic regurgitation for example) the diagnosis may grow from inferences (left ventricular dimensions, mitral leaflet flutter, etc.) rather than echo visualization of the defect per se (Figure 1). This type of indirect diagnosis allows more room for errors of omission as well as commission, but happily has nonetheless proven very valuable.

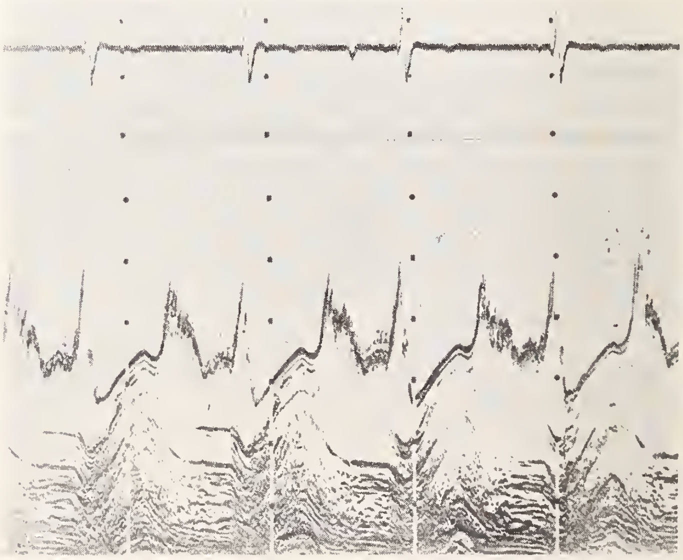

Figure 1

Fluttering of the anterior mitral leaflet during diastole in a patient with severe aortic regurgitation.

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In Cases of Possible or Proven Systemic Embolus:

In the patient who has had a cerebrovascular accident, especially when the cardiac rhythm is atrial fibrillation, mitral stenosis must be considered. This "unexpected" diagnosis is made in this setting with some regularity. Clearly, no laboratory test ought supplant a careful physical examination, but in some cases, the echo may be less likely to miss the diagnosis than the ear to miss subtle accentuation of pulmonic valve closure or a soft rumble.

Furthermore, systemic emboli are often the only clue to a potentially resectable left atrial tumor (myxoma). The echo is an excellent tool to make that diagnosis, although unfortunately not every small tumor can be positively identified. The risk of embolus recurrence and the therapeutic implications of these two lesions justify the search. The benefit/risk ratio of the echo is so high that the procedure is to be strongly recommended. We are accustomed to echo request forms that read "embolus in a young patient" and we encourage such requests.

There is some additional interest in left ventricular aneurysm location and possible identification of thrombus embolizing from this site, but those possibilities are not well delineated by routine M mode echocardiography. Also, atrial septal defect (ASD) and right-to-left paradoxical embolus might be mentioned since ASD can be suspected from the echo, but the frequency of this event is not great. Lastly on the subject of embolus, one might mention valve vegetation embolization. This echo diagnosis has probably been over emphasized and is further discussed in Appendix II.

In Evaluation of Increasing Heart Size:

The differential diagnosis of increasing heart size (by physical examination or x-ray) is always ventricular enlargement (dilation and/or hypertrophy) versus pericardial effusion. There are few clinical problems for which a specific technique is so well suited. Categorically ultrasound is the diagnostic procedure of choice as the best and safest way of demonstrating the actual structural change.

The echo information separates the group with valvular disease, cardiomyopathies and coronary disease (true ventricular enlargement) from those with infection, neoplasm, connective tissue disorders, etc. (pericardial effusion). Subsequent steps in reaching a more specific diagnosis as well as appropriate therapeutic decisions can then follow a more logical order.

Only one caution need be offered regarding pericardial effusion: False positive echo interpretations of "small effusions" are avoidable but probably frequent. Particular attention to technical details is necessary and had been reviewed elsewhere.[5]

In "Clinical Epidemiology" (Screening High Risk Patients):

Echo has a place in the search for cardiac lesions often associated with known systemic disease or in asymptomatic relatives of patients with known familial pattern heart disease. The potential list under this heading is long, since so many problems, i.e. hypertension, connective tissue disease, inflammatory bowel disease, congenital skeletal defects, etc. can be associated with cardiac pathology. It seems useful from the overall group to emphasize four groups: *hypertensives, patients with the Marfan Syndrome and their relatives, uremics, and relatives of patients with IHSS.* This choice is more of a clinical than an echo-guided recommendation, since foreknowledge in these particular settings may have distinct and specific protective value to the patient.

Hypertensive heart disease represents the major life threatening complication of systemic hypertension. Morbidity and mortality relate to the relative ischemia of hypertrophy, the specific subendocardial ischemia of increased blood pressure, the acceleration of coronary atherosclerosis, and presumably due to the aforementioned, increased risk of arrhythmic sudden death. The need to find and treat all hypertensives has recently received considerable attention. Of potentially equal importance is identification of the subgroup of hypertensives with cardiac sequelae, presumably those at risk for the above mentioned morbid and mortal events. The traditional reliance upon ECG and x-ray changes is unwarranted as these are late and inaccurate measurements of cardiac changes. Recent studies attest to the ability of echocardiography to identify some of the important pathologic anatomy in hypertension.[6, 7] We would suggest that patients thus identified are candidates for augmented surveillance and therapy schedules.

Some would treat aortic dilatation in the Marfan syndrome with beta blockade (Propranolol) in hopes of preventing dissection.[8] Most authors would recommend SBE prophylaxis for prolapsing mitral leaflet seen often in the same patients. Proven IHSS also raises the possibility of need for specific SBE prophylaxis as well as arrhythmia search and pharmacologic treatment considerations.

Uremia's liabilities include pericardial effusion and risk of cardiac tamponade, therefore knowledge of which patient has effusion is of value in predicting particular requirements of good individualized follow up care. Recurring effusions demonstrated by echo in some difficult to manage dialysis patients has led to elective, rather than emergency, pericardial stripping procedures.

The above list could be expanded, for example, one could use the echo to find the frequent small pericardial effusion in rheumatoid disease, hypothyroidism, etc. However the main purpose of itemizing only some is to emphasize settings in which high yield decision aiding data might be anticipated from the study.

When Echocardiography should be ordered in the hospitalized patient

In the Coronary Care Unit:

In the setting of a coronary care unit, sudden decompensation can generally be ascribed either to extension of infarction with irretrievable loss of critical ventricular mass, or the more potentially correctable acute mechanical lesions, ruptured ventricular septum or loss of mitral competence. Certainly a bedside Swan Ganz right heart catheterization is of major diagnostic utility in identification of the latter entities. Echocardiography also has a place in this evaluation. It offers specific information when ruptured chordae tendinae produce the mitral regurgitation and can demonstrate new abnormalities in ruptured septum. Additionally at times the echo will identify unexpected hemopericardium and developing tamponade in the acutely decompensating recent infarct victim.

Much has been written[9, 10] to suggest that the echo is of value in demonstrating the contractile abnormalities in ischemic heart disease. These reports are valid, but in our experience, the standard M mode echo can be very deceptive in estimating overall ventricular deficiencies. We do not use or recommend standard M mode echoes for routine coronary artery disease or post infarction patients. It is hoped that the emerging newer technology (see Appendix II) will offer better information in this regard.

In Screening Operative Candidates:

The exception to general disappointment with M mode echo in coronary disease patients has been the occasional recognition of better than expected left ventricular function. Candidates for bypass graft surgery and/or aneurysm resection are most often refused operation because of "inoperable" loss of viable muscle. Typically, the ejection fraction is below 30-40% and the operative mortality would be prohibitive. Significant heart failure with major left ventricular enlargement on x-ray has been used to make the presumptive "non-invasive" determination of inoperability. We have been surprised by the occasional such patient whose echo shows good septal as well as good posterior wall contraction patterns. This implies segmental disease restricted to the distal ventricle and therefore potentially operable. Such patients have gone on to have angiography they might not otherwise undergo, with confirmed apical aneurysms and subsequent successful surgery. We think therefore that "inoperable" patients not offered angiography, should have echocardiography. (Here too there will be a small but gratifying incidence of finding unexpected pericardial effusion as opposed to advanced LV dilatation).

In Pre-Catheterization Work-Up:

Most patients with acquired valvular or congenital heart disease who come to catheterization, do have an echo done first. It should be stressed that this is not merely an academic exercise before "definitive" diagnosis. Two lesions in particular are often overlooked in the pre-cath workups, and if not suspected can be missed even at cath. They are IHSS, and ASD, both of which require specific cath lab maneuvers for documentation which are not routinely performed if these entities are not under consideration. Both of these lesions can be demonstrated or at least suspected at echocardiography.

In Pre-Operative Planning for Prosthetic Valve Replacement:

In the mitral position, major post-operative complications including mortality have been ascribed to ball cage impingement on the left ventricular overflow space or to presence of a cage too large for the diameter of the chamber. In such cases, choice of a different type of prosthesis (low profile or heterograft) is now recognized to be mandatory. Echocardiographic measurements of these spaces should be performed to provide the surgeon with foreknowledge of special requirements.[11]

In the aortic position spacial incompatibility of prosthesis and vessel has been less of a problem, however, pro-operative knowledge of root diameter facilitates choice of the appropriate valve ring size.

Summary

Categories of indications for echocardiography in an adult clinical medicine practice have been proposed. This discussion has not included every situation but emphasized points at which clinical importance and echo accuracy converge. In the appendix that follows, some details of relative echo accuracy are amplified.

APPENDIX I

A. STRUCTURAL ABNORMALITIES:

In this and the following sections, a table is provided which summarizes relative diagnostic value of echo for most major clinical problems. The text for each table expands on selected problems. It is emphasized that not all echocardiographers would agree with all of the following designations. Type of equipment, patient population, experience with, and expectations of the procedure no doubt influence degree of confidence in any partly subjective interpretation.

Best known of all echocardiographic abnormalities, is mitral stenosis. There are virtually no false negatives and when done properly, the only false positives are resultant of other pathologic abnormalities restricting left ventricular filling. IHSS can be a technically difficult heart to echo but on a good quality study the patterns in this condition are pathognomonic. The major pitfall in overlooking the diagnosis is failure to observe both true endocardial surfaces of the septum. The main "false positive" hazzard is over-reading SAM, (systolic anterior motion of the mitral leaflet) which at times is artefactual and is not in itself totally specific for IHSS. Aortic regurgitation can probably be demonstrated in 75% of cases, and interestingly is recognized by observing the abnormal diastolic fluttering of the mitral valve and septum rather than any specific aortic pattern. Pericardial fluid, particularly more than 300 cc can hardly be missed by echo. More a concern is the possibility of a false positive diagnosis due either to improper beam direction or faulty gain settings.

Small atrial myxomas may be missed but larger ones are readily demonstrated. Echo is the screening procedure of choice for this lesion. Prolapsing mitral leaflet is probably the most controversial diagnosis among cardiologists today. There is considerable room for technical error on echo, but far more important are the clinical uncertainties as to the significance of the echo proven abnormality. The frequency of a prolapsing pattern, if diligently sought, has been reported to be as high as 21% among healthy volunteers.[12] In the absence of mitral regurgitation, the meaning of this finding is unclear.

An atrial septal defect is not observed echocardiographically. Rather it is inferred from paradoxical, ventricular septal movement. This abnormality is not seen in small shunts and not specific for the cause of the presumed abnormality which is right ventricular volume overload. It has recently been appreciated that different segments of the ventricular septum move in different ways; particularly the upper septum may appear to be "abnormal" in most normals. Consequently there can be technical problems with this diagnosis.

In the presence of rheumatic mitral stenosis, the pattern of tricuspid (TS), including apparent thickening or calcification, is probably specific. Two concerns have been that hemodynamic correlations in TS are usually incomplete, and right heart structures in general can be difficult to echo in the adult.

The problem of aortic stenosis has been mentioned above. A normal study probably excludes A.S. However, the echoes seen with stenosis i.e. redundant lines (calcium?), eccentricity of cusps, and narrowed systolic cusp separation all can represent technical and not pathologic factors which diminished somewhat the value of any given observation.

The pulmonary valve, and in fact most right heart structures, as commented on regarding the tricuspid, are less accessible than the left heart to examination in adults. This is in part due to chamber size and in part to the overlying sternum and ribs with a tendency for strong chest wall echoes to obscure nearby structures. Also, in adults the incidence of organic pulmonary valve disease in low.

When mitral regurgitation is due to a ruptured chord or a prolapse, then the echo is very specific. When it is due more to ventricular dilatation or papillary muscle ischemia then there are no major leaflet changes and echo cannot be expected to be very specific. At times, very exaggerated mitral excursion combined with a large left atrial diameter can lead to the proper echo diagnosis.

Without question, aortic root dissection can be observed on an echocardiogram. The difficulty has been that the abnormalities, "thickened" or separated aortic wall echoes are not adequately specific.[13] False positives are a real concern. Similar specificity and sensitivity difficulties have been encountered with endocarditis. A large vegetation does produce abnormal echoes; however certainty as to interpretation of such a reflection is hazardous. Similar echoes can occasion-

Table 1

STRUCTURAL ABNORMALITIES

Excellent	*Good*	*Fair to Poor*
Mitral Stenosis	Atrial Septal Defect	Pulmonic Stenosis
IHSS (Idiopathic Hypertrophic Subaortic Stenosis)	Tricuspid Stenosis	Pulmonic Regurgitation
Aortic Regurgitation	Aortic Stenosis	Mitral Regurgitation
Pericardial Effusion	Ebstein's Anomaly	Ventricular Septal Defect
Atrial Myxoma		Tricuspid Regurgitation
Prolapsing Mitral Leaflet		Aortic Dissection
		Endocarditis

ally be seen in normals and deformed valves due to other inflammatory processes can have the same appearance with or without currently active infection. Furthermore, a normal echo cannot possibly exclude small vegetations.

B. DIMENSIONS AND THICKNESS:

Ultrasound is a near perfect tool for measuring distance and therefore can be employed for cavity diameter or structural thickness (Figure 2). The problems with such measurements relate to control of sound direction, beam width and structural geometry of the heart. As clinically employed, certain diameters have been extensively studied and standardized and can be considered to be very reliable. These are left atrial diameter at the level of the aortic cusps and the short axis of the left ventricle. The aortic root diameter can also usually be measured accurately, especially when normal or only moderately enlarged. With gross dilatation however, distortion of usual relationships can create spurious images and result in inaccuracies. In measuring diameters, again the right heart structures are much less accessible to this type of analysis although significant right ventricular dilatation can usually be appreciated.

Theoretically, ultrasonically measured thickness of the posterior left ventricular wall would be accurate to fractions of a millimeter. In practice, it is diminished by the fact that the beam may not encounter the wall as a perfect perpendicular and the echoes from adjacent structures can appear as unavoidable superimpositions. Nonetheless, at least for LV muscle thickness, the echo has been extremely useful.

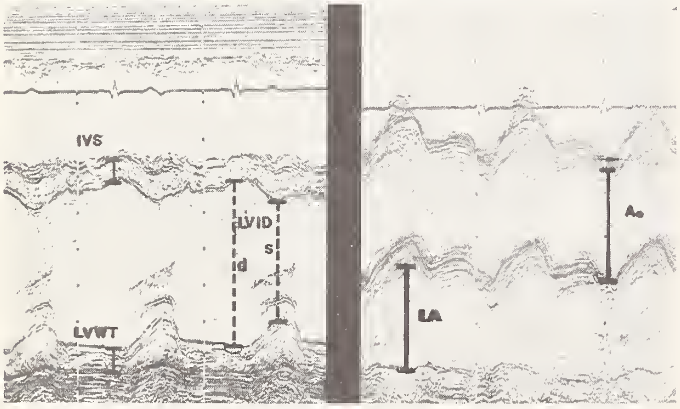

Figure 2

On the left, the echo measurements of septal (IVS) and free wall thickness (LVWT) are shown, along with diastolic (d) and systolic (s) cavity diameters (LVID). On the right, the appropriate view for aortic (AO) and left atrial (LA) diameters is displayed.

C. FUNCTIONAL EVALUATION:

Elevated left ventricular pressure, hallmark of failure, is translated functionally as resistance to diastolic filling. The characteristics of filling in turn are reflected in the movement of the mitral valve. Thus, evidence of reduced filling rate in the absence of the other hallmarks of mitral stenosis reproducibly means elevated LVEDP.

It has been mentioned before that the echo displays the contractile pattern of muscle in the sound path. Therefore in a symmetrical ventricle, free of segmental ischemia or fibrosis, one can measure shortening percentage, rate of contraction, etc. which reflect the mechanical state of the ventricle as a whole. Estimates of ejection fraction, velocity of fiber shortening and other indices can be calculated. Minor inaccuracies in a measured diameter will, of course, be magnified by subsequent derivation (squares, cubes, etc.) and so calculation to volume data is less accurate than the original linear values.

Unfortunately when the ventricle suffers a segmentally distributed insult (notably coronary artery disease) any given linear measurement no longer reflects the chamber as a whole and becomes much less reliable.

Other kinds of functional data can also be obtained from the echocardiogram. Demonstration of pericardial fluid usually raises a question of tamponade. Since this disorder is another cause of reduced diastolic filling, evidence for tamponade can be found in reduced mitral leaflet rate of excursion. Furthermost a characteristic deformity in contractile pattern has recently been reported as diagnostic of significant tamponade.[14]

Pulmonary hypertension can be inferred from a change in movement pattern of the pulmonic valve. When observed, it appears to be specific. The limitations are obtaining a technically adequate view of this valve, and the apparent requirement of considerable pressure elevation to effect this change.

Finally, although much has been written in testimony to evaluating the function of implanted prosthetic valves by echo, we have found its value limited. The

Table II

DIMENSIONS AND THICKNESS

Excellent	*Good*	*Fair to Poor*
Left Ventricular Dilatation	Aortic Dilatation	Right Atrial Enlargement
Left Ventricular Hypertrophy (Ventricular Septal Hypertrophy)	Right Ventricular Dilatation	Pulmonary Artery Dilatation
Left Atrial Enlargement		Right Ventricular Hypertrophy

Table III

FUNCTIONAL EVALUATION

Excellent	*Good*	*Fair to Poor*
Left Ventricular Diastolic Hypertension (elevated LVEDP)	Left Ventricular Volume Data	Segmental LV Dysfunction (Coronary Disease)
Left Ventricular Function (contractility, percent shortening etc: *only* in absence of segmental disease)	Pericardial Tamponade	Prosthetic Valve Function
	Pulmonary Hypertension	

multiplicity of echoes at different velocities of reflection produce complex, difficult to interpret images. Gross reduction in excursions of the occluder can be observed. Regurgitation through or around an aortic prosthesis can be suggested as in "native" AR by fluttering of the mitral leaflet. In general, however, we have not had a high degree of confidence in interpreting prosthetic valve echoes.

APPENDIX II
NEWER METHODS IN ECHOCARDIOGRAPHY

The major limitation of echocardiography to date has been the restricted view of a narrow or "icepick" beam through a small part of a complex structure. Prototype equipment has recently been developed which displays large segments of the heart simultaneously. The resultant video images resemble an angiogram, allowing recognition of distinct landmarks which can be then related to adjacent structures. With this capability, one can begin to examine the entire heart, sector by sector and know precisely what zone is in view.

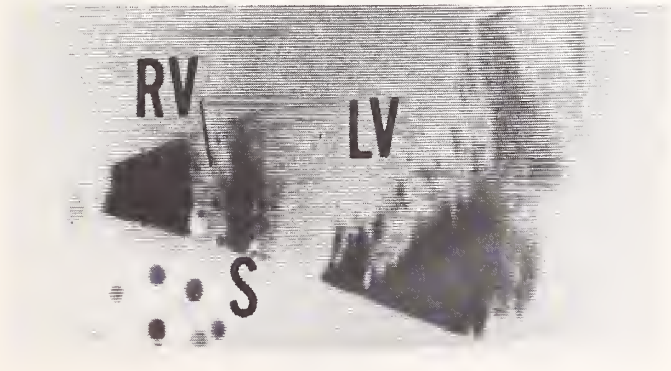

Figure 3

A still frame image taken from a real-time two dimensional echo system. The normal right ventricle (RV) and intraventricular septum (S) are identified. The left ventricle (LV) in this patient is markedly dilated as a result of previous myocardial infarction.

The technology to accomplish this type of imaging (in adults) requires moving the echo path across an arc. This has been done electronically in some systems and mechanically in others. The image from both types of systems resembles a pie-wedge view of the heart.

Figure 3 is such a study performed with a mechanical sector scanner. An important feature of these examinations is that they are viewed in motion which affords interpretation of function. The examinations are stored on video tape (unfortunately, for reproduction in journal format, only single frames can be shown).

Thus far in the infancy of this newer technique, such studies have accurately identified complex interrelationships in congenital heart disease, assessed the degree of valve stenosis, and displayed specific geometric abnormalities of the adult left ventricle. It is anticipated that this approach will greatly expand our capacity to make clinical decisions based upon ultrasonic cardiac examinations.

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Cardiovascular Exercise Physiology and Stress Testing

Rene A. Langou, M.D. and Lawrence S. Cohen, M.D.

Introduction

The physiologic adjustments induced by the stress of exercise have come under intensive study during the past decade. These same physiological data have been applied to the clinical practice of medicine, using exercise testing as a diagnostic tool for the detection of latent myocardial ischemia, circulatory functional capacity and more recently as a therapeutic procedure to improve cardiac performance.

Any discussion involving exercise and the heart should consider exercise physiology and exercise stress testing for both diagnostic and prognostic purposes.

I. Cardiovascular Exercise Physiology

Physiological responses to exercise are complex and involve responses from the cardiovascular, respiratory, musculoskeletal and nervous system. Circulatory adjustments to exercise are necessary in order to increase oxygen supply to exercising muscles, and remove waste products from them. Under normal circumstances the cardiovascular response to exercise is not limited by myocardial hypoxia, but under abnormal conditions such as in patients with coronary artery disease, myocardial ischemia is the limiting factor.

Changes in cardiovascular function are initiated through neurovascular reflexes, originating from the cerebral cortex and diencephalon[1] at or before the beginning of muscular exercise. There is an increase in sympathetic activity and a decrease in parasympathetic impulses. These changes in autonomic nervous system function produce a redistribution of the effective cardiac output with the most marked changes occurring at the level of exercising muscles. These vascular beds receive a relatively larger proportion of the total cardiac output than during the resting state. The skin and splanchnic areas conversely undergo a marked reduction in their flow.

The increase in blood flow to active muscle beds is not only mediated through a central mechanism; in working muscles increased metabolism produces a fall in local pH and in the composition of the interstitial fluid, causing an opening of vascular channels not already dilated by the sympathetic vasodilator activity. This local control is the most important factor in the increased blood flow to the working muscles.

The central circulatory response to exercise is initiated through an increase in cardiac output, mediated through an increase in heart rate and/or stroke volume. There is also an increase in maximal oxygen consumption as reflected by a widening of the arteriovenous oxygen difference (A-VO_2 diff.) in addition to the increase in cardiac output. The cardiovascular response to exercise is influenced by several factors, in particular the type of exercise (arm or leg exercise; dynamic or isometric work), the age of the subject, the duration of the exercise and lastly the environment under which the exercise is performed. In daily life, the most common type of exercise is dynamic exercise, performed with the legs. Exercise testing and training are also based on this kind of exercise.

Dynamic Lower Extremity Exercise

Oxygen consumption (VO_2) is a product of cardiac output (C.O.) and arteriovenous extraction of oxygen (A-VO_2). The cardiac output in turn is derived from the product of stroke volume and heart rate. Increased transport of oxygen during submaximal exercise results mostly from an increase in cardiac output. The contribution of heart rate and stroke volume will depend upon the posture and the intensity of the exercise.

In the resting supine position, the cardiac output is approximately 2 liters/minute higher than in the resting upright posture, due to a greater stroke volume in the supine position.[2] During submaximal exercise in the supine posture, the stroke volume does not change significantly and the increase in cardiac output is largely dependent upon an increase in heart rate.[3] During supine exercise, the heart rate and cardiac output increase linearly with oxygen consumption.[3] It is unknown whether this relationship remains linear up to maximum exercise levels. On the other hand, during upright exercise, the heart rate and cardiac output are linearly related to the oxygen consumption up to approximately 70% of the maximum oxygen intake; at higher exercise levels, the contribution of an increase in A-VO_2 difference appears greater than that of an increase in heart rate.[4]

Redistribution of cardiac output is a very important physiologic compensation during exercise. Wade and Bishop[5] showed that 21% of total cardiac output was directed to the muscles at rest in normal subjects, and this proportion increased up to 88% during exer-

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cise. The splanchnic and renal blood flow decreased from a resting value 24% and 19% respectively to 1% during mild exercise. The skin also showed a drop in flow from 9% at rest to 2.5% during exercise. The cerebral blood flow remained constant in absolute terms, but there was a fall relative to the total cardiac output. Coronary blood flow increased during exercise fourfold from 250 ml/minute to 1000 ml/minute, and this increase correlated well with the total increase in cardiac output.

The increase in cardiac output documented during exercise is based on several mechanisms, namely, tachycardia, sympathetic stimulation to the heart and the Frank-Starling mechanism.[6] The increase in stroke volume or the persistence of an unchanged stroke volume at a faster heart rate is achieved partly through an increase in myocardial contractility; mediated through both catecholamine stimulation of the heart and the higher heart rate itself. The Frank-Starling mechanism also plays a role in the behavior of stroke volume during exercise. At any given heart rate, left ventricular end-diastolic volume and stroke volume are greater during mild supine exercise than during resting tachycardia induced by atrial pacing.[6]

Despite the fall in total peripheral resistance which occurs during exercise, the mean arterial pressure increases modestly, and this increase is related to the severity of the exercise.[7] Maintenance of systemic arterial pressure during exercise depends on the increased cardiac output and on the vasoconstriction of the resistance vessels in the non-exercising beds.[8] This reflex vasoconstriction is presumably mediated through increased sympathetic tone.

Isometric Exercise

Isometric exercise or static effort may be defined as sustained muscular contraction against a fixed resistance, such as lifting, pulling of pushing a stationary object. The cardiovascular response to this type of exercise is characterized by higher increments in heart rate, blood pressure and cardiac output as compared to dynamic exercise of the same absolute intensity.[9] The rise in blood pressure during isometric exercise is more closely related to the increment in heart rate and cardiac output since total peripheral resistance does not usually change.

Sustained isometric handgrip exercise is now used as a stress test in the evaluation of left ventricular function, since the hemodynamic response of patients with heart disease is often different from that of normal subjects.[10]

Influence of Sex, Age and Environment on Exercise Physiology

The most important difference between sexes is that during maximal exercise females have a lower stroke volume and a higher heart rate compared to males.[4] Aging progressively alters the cardiovascular response to exercise. At a given level of submaximal oxygen consumption, older subjects of both sexes have a lower cardiac output and a greater A-VO_2 difference than younger subjects. Resting arterial blood pressure and peripheral resistance trend toward a higher level with increasing age.[11] Exercise in a high environmental temperature is characterized by higher heart rate, and lower stroke volume, central blood volume and blood pressure[12] than at normal temperatures. The cardiac output is unchanged or only moderately increased.[13] Circulatory modifications due to heat are less marked in physically well trained subjects and are reduced after heat acclimation.[14] Exposure to a low environmental temperature, at rest or during exercise, causes only an increase in systemic plood pressure, the other hemodynamic indices remain unchanged.[15]

II. Exercise Stress Testing

Until recently, the most common use for exercise testing was in the electrocardiographic detection of myocardial ischemia. The development of multi-stage exercise tests has allowed exercise testing to be used as an indicator of functional capacity.

Exercise electrocardiography has been used in the diagnosis of ischemic heart disease since Arthur Master introduced the two-step test in 1929. The major purpose of exercise stress testing is to provoke myocardial ischemia. Ischemia occurs when myocardial oxygen requirements exceed myocardial oxygen supply. The major determinants of myocardial oxygen consumption are: ventricular wall tension, heart rate and the state of myocardial contractility.

Myocardial oxygen supply depends upon total coronary blood flow and the distribution of such blood flow. Coronary blood flow is related to the effective perfusion pressure, coronary vascular resistance and the diastolic time available for coronary filling. In the presence of coronary artery disease, considerable alterations occur in the normal pattern of coronary blood flow.[16] Reduction of coronary perfusion pressure distal to a stenotic area may reduce regional coronary blood flow or produce a redistribution of intramyocardial blood flow away from the subendocardium.[17]

Exercise produces an increase in myocardial oxygen demands by increasing heart rate, elevating afterload, and increasing myocardial contractility. It has been shown that the triple product of heart rate, aortic systolic pressure, and left ventricular ejection time correlates very well with myocardial oxygen consumption. Robinson[18] reported an excellent correlation between the double product of heart rate and systemic systolic pressure and angina pectoris. Both the triple product and the double product, have been used clinically as indicators of myocardial oxygen consumption.

It has long been recognized that acute ST segment depression in the resting electrocardiogram occurs during spontaneous attacks of angina pectoris and that similar reversible changes can be precipitated during attacks of angina induced by exercise or rapid atrial pacing. Detry[19] has reported a reproducible ST segment depression at any given level of exercise. The same findings were reported by Lau[20] during rapid atrial pacing. These data suggest that the ST segment depression is not a random response to exercise but is closely related to the amount of stress and therefore ischemia undergone by the myocardium. Heart rate alone is closely related to the magnitude of ST segment depression during exercise, justifying its use as a good base for standardization of exercise testing.

Protocols for Exercise Testing

A major problem in the critical assessment of exercise protocol testing is the lack of uniformity between different laboratories. Several different exercise protocols including single and multiple stage exercise testing are in use throughout the country. In a single stage test, the workload is held constant while in a multi-stage test, it is increased at regular intervals until the end-point is reached.

The most common single stage test is the Master two-step test, which involves the performance of ten to thirty-seven trips up and down two measured steps over 1½ minutes; the number of trips depend upon age, weight and sex of the tested subject. A double Master's test involves twice the number of trips over three minutes.

The best known multi-stage test is that of Bruce *et al.*[21] which utilized the treadmill at 1.7 mph at a 10% grade, with increments every three minutes of 0.8 mph and 2% in grade.

Mason and Likar[22] utilized a stationary bicycle ergometer, exercising their patients at a constant-load, for five minutes at each load level with five minutes of an intervening rest period. In our laboratory, a multi-stage continuous bicycle exercise stress test, with progressive increments of workloads every four minutes is utilized.

End points for multi-stage exercise testing in most laboratories are ischemic ST depression, anginal chest pain, extreme fatigue or dyspnea, ataxia, ventricular tachyarrhythmias or the achievement of a heart rate of 80 to 90% of the maximal predicted heart rate for that individual.

Recording Techniques

Differences in recording techniques between different laboratories have influenced the results of exercise testing. It is a well known fact that virtually all the ST segment information contained in a conventional exercise electrocardiogram is obtained in leads II, AVF and V3 to V6. Blackburn *et al.*,[23] found that 89% of that information is contained in lead V5. The Frank lead system has been used for exercise electrocardiography and it was found that 65% of patients had changes in the X lead, 25% in both X and Y leads and only 10% in Y. Because of these results, attempts have been made to simplify the lead system, and recent investigations have shown that bipolar leads with the greatest R wave height and greatest ST depression are found in leads CM5 and CS5 (CM5 = reference electrode over the manubrium sterni, exploring electrode over V5. CS5 = reference electrode over the right lateral subclavicular area, exploring electrode at V5). Redwood and Epstein[24] used a third electrode placed on the sacrum for recording of a vertical lead in order to detect inferior wall changes which could be missed on the horizontal place leads.

In our laboratory, we are currently using a system with three precordial leads; V2, V4 and V6 and a fourth lead whose exploring electrode is placed on the forehead. This fourth lead records an inverted AVF tracing and detects changes produced in the inferior wall. The electrocardiographic recordings are obtained every minute during and after the graded exercise test for V4 and V6 and every four minutes for all four leads, until the heart rate has achieved pretest levels. Blood pressure measurements are taken during exercise and post-exercise periods every four minutes.

Interpretation of Exercise Electrocardiograms

The optimal criteria for judging whether or not an ST segment response is normal or abnormal is complicated by the fact that rigorous criteria result in a high percentage of false negative responses, while less rigorous criteria result in a number of false positive responses.

Although long term follow up data upon which to base electrocardiographic criteria of normalcy or "ischemia" is limited, the following criteria appear reasonable. To be significant and suggestive of ischemia, there must be a flat (slope = 0 or less than 1 mV/sec) or downsloping ST segment depression induced by exercise and relieved by rest. The depression must be 0.08 seconds or more in duration and its displacement must be at least 0.1 mV measured at the beginning of the ST segment when submaximal or maximal exercise is used.

The ST segment depression criteria are usually applied to the lead or leads which are continuously monitored, but may be applied to any other lead which, in the resting tracing demonstrates a predominant R wave in the QRS complex and a normal upright T wave. The measurement may be applied to an electrocardiographic tracing during exercise, in the immediate post-exercise period or the late post-exercise (4 to 6 minutes) period. Junctional or "J" point displacement by itself does not appear to be related to the future development or current presence of coronary disease. While Master and Rosenfeld[25] believed that 30% of patients who manifested a "J" point depression had organic heart disease, Robb and Marks[26] found that the persons having "J" point depression had the same mortality as those with no such changes on exercise. Other observers found that "J" point depression of 2.0-2.5 MV constitutes an abnormal response and usually precedes the onset of exercise induced ischemic ST segment depression.[27]

Other electrocardiographic changes whose significance is unclear are exercise induced ventricular dysrhythmias, bundle branch block, inverted resting T waves becoming upright or increasing in amplitude during exercise, and T wave inversion of more than two millimeters without ST segment displacement.

Sensitivity and Specificity of Multistage Exercise Testing

Multistage near-maximal tests are much more sensitive in the diagnosis of anatomic coronary heart disease than single stage stress tests. The overall sensitivity of an ST segment depression of 1 mm during or after exercise was 76% in a composite group of 188 patients studied by Mason *et al.*, 1967,[28] Kassebaum *et al.*, 1968[29] and Roitman *et al.*,[30] 1970. The specificity of near maximal exercise testing is also satisfactory as the percentage of false positive responders was only 8%. (Table 1). It has been claimed that maximal exercise testing will improve sensitivity of the test, but there are no data that compare maximal exercise testing with angiographic findings.

Table 1

Source	*Number of Cases*	*Sensitivity*	*Specificity*
Mason *et al*, 1967[28]	84	78%	89%
Kassebaum, 1968[29]	68	50%	97%
Roitman *et al*, 1970[60]	46	80%	87%
Total	198	76%	92%

There is a significant number of patients (approximately 24%) with documented anatomical coronary artery disease who have normal electrocardiographic response to submaximal exercise. The proportion of false negative responders tends to be less in patients presenting diffuse triple vessel disease. The presence of collateral vessels or previous myocardial infarction does not seem to influence the false negative electrocardiographic response to exercise.

False positive responses occurred in 8% of patients studied by the above mentioned investigators. The question whether or not these ST segment depressions reflect myocardial ischemia, remains unanswered. The possibility of small vessel disease which might be missed at angiography due to the small caliber of the involved vessels or the presence of an abnormal hemoglobin-oxygen dissociation curve in these patients is an intriguing but unproved hypotheses. Normand *et al.*, have suggested the presence of an abnormal myocardial enzymatic activity in such cases.[31]

Implications of Exercise Testing

The preceding discussion has dealt with the diagnostic implications of exercise testing. Prognostic implications of these tests is of critical importance.

Robb and Marks[26] analyzed the results of the Master Two Step Test in insurance applicants. The death rate from coronary artery disease was found to be eight times higher among those with a positive exercise test than among those with negative tests. In addition, mortality was found to increase as the quantitative amount of ST depression induced by exertion increased. It must be noted that some of the patients included in the study had overt clinical manifestations of coronary heart disease.

Doyle and Kinch[32] studied a group of 2,003 subjects without overt evidence of existing CHD using submaximal stress testing. Of the 75 men who developed abnormal exercise tests during the course of the study 85% developed overt disease over the next five years. This contrasts to the follow up of subjects who continued to have normal exercise tests; these individuals had only a 1.5% probability of developing overt manifestations of ischemic heart disease over the five year period. Moreover, Doyle and Kinch documented that, of the 264 asymptomatic men with normal exercise tests on admission to the study who eventually died coronary deaths or who developed angina or myocardial infarction, 30% developed an abnormal stress test as the first manifestation of coronary artery disease.

Thus there is ample evidence to suggest that an abnormal stress test has a high predictive value for coronary artery disease and must be weighed heavily in patient therapeutic decisions.

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Physical Conditioning as Therapy for Angina Pectoris

Steven Wolfson, M.D. and Jimmy C. Costin, M.D.

Heberden's original description of angina pectoris included a case report of a man who cured himself of the symptoms by "sawing wood for half an hour every day."

This represented the first of many such case reports. Subsequent enthusiasm for physical conditioning was based on these, on some experimental data, and even more so on faith in the virtue of labor. The rationale has persisted to this day. Some newer data are now available, and enable physical conditioning to be considered rationally along with pharmacological and surgical approaches. Its effects can be traced to physiologic mechanisms, and it should be assigned concrete indications, risks, side effects, and optimal prescribing directions.

The psychological benefits of a conditioning program are clear. Patients can learn that, under appropriate supervision, exercise is safe, they need not be "cripples," and that they can be helped to a fuller and more active life. These can, by themselves, be accepted as desirable goals.

a) *Physiological changes during exercise*

Severe muscular exercise places great demands on the circulatory system.[1] Walking up a moderate grade, for example, may double cardiac output,[2,3] along with striking elevations in heart rate and blood pressure. These hemodynamic changes are mediated through three basic mechanisms:

1) The metabolic rate of actively exercising skeletal muscle increases. Significant vasodilatation, probably locally mediated, occurs in the vascular supply to all such muscle, resulting in a fall in systemic vascular resistance and a rise in both venous return and cardiac output.[4,5]

2) By actively constricting systemic veins, the "muscle pump" represented by actively exercising skeletal muscle promotes the return of blood to the heart, thereby increasing cardiac output and stroke volume.

3) The autonomic nervous system is activated with stimulation of catecholamine release from the adrenal gland as well as neurogenic release from sympathetic nerves. The result is stimulation of myocardial contractility, and maintenance of arteriolar resistance by some active vasoconstriction in non active tissues.[6,7,8]

All the above result in increases in heart rate and myocardial contractility. These changes, therefore, contribute to a markedly increased demand for coronary blood flow.

Physical conditioning affects almost all of the alterations induced by exercise.[9]

(i) Alterations in skeletal muscle oxidative enzymes have been shown, resulting in greater efficiency and a decrease in the demand for blood flow.

(ii) Cardiac output and blood pressure at comparable levels of effort are lower in conditioned subjects.

(iii) Plasma catecholamine levels during exercise have been demonstrated to be decreased after a program of physical conditioning.[10]

Heart rate, blood pressure, and the level of adrenergic tone, therefore, are lower during stress in conditioned subjects. The myocardial demand for coronary flow and oxygen supply is therefore decreased.

Although some animal studies have suggested that conditioning increases the vascularity of the heart, there is no available data documenting increased collateral formation in man. At present, our only solid evidence is for the peripheral effects of conditioning.

As a result of the attenuated hemodynamic response to exercise consequent to physical conditioning, training does decrease the symptoms of myocardial ischemia in selected patients. Post infarction, conditioned patients have fewer anginal symptoms.[11] An increase in objectively documented effort tolerance has also been shown.

Retrospective epidemiologic studies have suggested that physically active subjects may have longer life spans and fewer heart attacks. However, most of these studies suffer from the presence of significant differences between the study populations, other than simply their level of effort.[11]

b) *Selection of patients for exercise programs.*

Screening of patients considered for an exercise program should include a complete history, physical examination, resting electrocardiogram and chest X-ray. The field of inquiry must not be confined to the heart, however. Orthopedic disability, massive obesity, severe chronic respiratory or peripheral vascular disease, may preclude consistent participation in a program of physical conditioning. Uncontrolled hypertension would be a contraindication to such a program. Patients with very severe anginal symptoms on

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minimal degrees of exertion would have difficulty generating sufficient exercise to become conditioned, and probably represent high risk candidates for this approach.

c) *Exercise Testing*

The next step would be an exercise test. This would identify patients with potentially dangerous responses to exercise, such as marked ST segment depression (greater than 2 mm.), arrhythmias, or hypotension during exercise. It also permits estimation of a patient's level of effort tolerance, provides an evaluation of the efficacy of a given dose of propranolol in controlling heart rate, serves as a guide to the exercise prescription for training, and then serves as a baseline for following patients through the program. As patients progress in the program, repeat exercise tests should show lower heart rates and blood pressure for any given level of effort, and an improvement in effort tolerance and endurance if conditioning occurs. A number of exercise testing protocols are available.[12,13]

During testing continuous ECG monitoring (before, during and after activity) must be used. Supervision by a physician, or by a trained technician with a physician in close proximity, is appropriate. The laboratory must contain a defibrillator. Oral, sublingual, and intravenous medications must be available. Both the treadmill and the bicycle ergometer have proponents, but neither has totally compelling advantages. The stress-testing instrument should be stable, have multiple reproducible settings, and produce minimal vibration or electrical interference. Neither is there one uniquely superior electrocardiographic lead system. The ECG leads must include lateral precordial locations, and should be applied with great care. The skin must be cleansed and men shaved, when appropriate. Close, stable, electrical contact with the dermis is essential for an adequate electrocardiographic baseline.

Criteria for terminating an individual exercise test should be based upon the patient's response to the stress. Specific end points would be any of the following:

(i) ST segment depression (horizontal or downsloping) of 0.1 mv or more in the left precordial leads, with or without chest pain, developing in the setting of a normal baseline tracing;

(ii) Paroxysmal supraventricular arrhythmias;

(iii) Frequent premature ventricular contractions or ventricular tachycardia;

(iv) Appearance of 2nd, or 3rd degree atrioventricular block;

(v) Failure to develop or maintain a normal increase in systolic pressure with ascending levels of effort.

Chest pain, without objective electrocardiographic changes, presents an individual judgement, particularly if the diagnosis of coronary artery disease is in doubt. Continuation of the test despite *mild* pain may yield an unequivocally positive study.

Once an endpoint has been reached, the means for terminating a study deserve careful consideration. Abrupt cessation of erect exercise can create a stress all its own. With less of the "muscle pump," a significant fall in venous return occurs. The peripheral vasculature is still dilated, heart rate, adrenergic tone, myocardial contractility and oxygen demand, are still at high levels. Abrupt decreases in blood pressure may occur, often potentiated by vagal reflexes, and complicated by arrhythmias. Diastolic arterial pressure may fall sufficiently to compromise coronary perfusion.

To avoid these potentially dangerous changes, we recommend that the test not be stopped abruptly. Preferably, the bicycle resistance can be dropped to a minimal level, or the treadmill speed and grade brought to the lowest stage. Patients can then continue pedalling or walking with little stress and thus ensure adequate "muscle pump" function and venous return. Anginal symptoms and electrocardiographic changes are always promptly reversed. Patients can therefore be encouraged to continue a low level of exercise until heart rate and blood pressure return toward resting levels. With these precautions, adverse effects of ceasing exercise are very rare. A bed or stretcher should, however, be available if patients must stop exercise abruptly.

d) *Guidelines for Exercise Programs:*

After screening by exercise testing, patients usually fall into three categories:

(i) Persons with normal findings can take part in any type of activity in which the maximum level of intensity does not exceed that of the test.

(ii) Persons with an abnormal test should enter a supervised exercise program, with either trained lay personnel and/or a physician present, and equipment available for treating emergencies.

(iii) Those who develop arrhythmias, marked (> 2mm.) ST segment depression, or a falling blood pressure with effort, should be excluded.

Types of Exercise: Activities which produce a sustained increase in metabolic and cardio-respiratory function are required for training. Vigorous walking, bicycling, swimming, jogging, running, rope-jumping, rhythmic calisthenics are examples. All forms of isometric exercise (i.e., tensing one's muscles against an immovable object) should be avoided since they provide virtually no improvement in cardiovascular function and provoke dangerous pressor responses. Arm effort is also associated with a higher arterial pressure than leg effort producing similar levels of O_2 consumption. It should probably be avoided in cardiac patients. Changes in routine daily activities can help: walk, don't ride; climb, don't ride elevators; etc.

Intensity and duration of exercise: Published programs for conditioning of cardiac patients[12,13] share a number of characteristics.

- A "warm up" period should precede intense effort.
- The heart rate response to exercise should be estimated or monitored. Maximal intensity can be that which produces a heart rate up to 80% of the highest rate achieved during testing.
- angina patients should probably take nitroglycerin before exercising.
- early in a program, exercise may be limited by musculoskeletal discomfort, later by fatigue. Angina should always signal an end to an exercise period.
- for conditioning to be accomplished, the peak intensity and/or the duration of exercise must progressively increase at regular intervals.
- a "cooling off" period must follow all periods of intense effort (see above for deleterious effects of abrupt cessation of exercise).

Frequency of Exercise: Training may be attained with a minimal program of 30 minute sessions thrice weekly. Conditioning changes should be documented within 6-12 weeks after beginning such a regimen. Retesting is suggested at 10-12 week intervals, so that a new exercise prescription can be given. Once the desired level of training is achieved, less frequent (at least two per week) sessions may be used for maintenance of a level of conditioning. *The benefits achieved by a training program are maintained only so long as the commitment to regular exercise lasts.* Resumption of sedentary habits results in rapid deconditioning.[14]

e) *Risks and Side Effects:* The risk of mortality within 24 hours following an exercise test is < 1 per 10,000; non-fatal complications necessitating hospitalization average 2.4 per 10,000.[15] Whenever a minor illness presents, interruption of an exercise program is indicated. Exercise potentiates cardiac involvement by viruses, for example. Unusual environmental conditions (very high or low temperatures, high humidity, high altitudes), excessive emotional strain, and postprandial status all increase the cardiac demands, and the risks of exercising.[12]

Muscle aches, joint stiffness, generalized fatigue are common in the early stages of exercise training and usually result from inappropriate exercise at too fast a pace. Reduction of the intensity of effort, until these symptoms remit, is advised. Orthopedic complaints are the most common complications of exercise programs.[12]

Thus, physical conditioning is an effective form of treatment for patients with angina. It presumably works through affecting the peripheral hemodynamic, and secondarily the cardiac, response to stress. A successful program also confers considerable psychological benefits to the patient.

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The Role of Coronary Artery Bypass Surgery in the Management of Ischemic Heart Disease

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Abstract—Considerable experience with coronary artery bypass has been achieved, and data are now available on the results of the operation. Present indications for coronary revascularization and its limitations are reviewed. The results with the internal mammary artery as a bypass conduit have been even more encouraging than with vein grafts and the factors affecting the selection of bypass graft are discussed.

Approximately 90% of patients who survive the procedure experience relief of angina and 75% have no further chest pain. Most return to their jobs and full activity. About 85% of the patients have improved results on objective testing; this improvement correlates well with graft patency. There is also evidence that myocardial contractility for segments with a patent graft can be improved, particularly when there is no infarction and preoperative wall motion is moderately depressed.

The operative mortality for patients with stable angina is approximately 4% and is related to the quality of ventricular function. The mortality rate in patients with unstable angina is considerably higher in many institutions, but specific precautions which decrease the work load of the left ventricle lower the mortality rate close to that for patients with stable angina. The results suggest that coronary bypass surgery decreases the incidence of infarction, particularly in unstable angina, and may favorably influence survival. When carried out within 2-4 hours after onset of coronary occlusion, it may prevent infarction or minimize its extent. The need is recognized, however, for more information on the role of bypass surgery in patients with symptoms less severe than those currently accepted as clear-cut indications for operation.

Introduction

With the development of cardiac surgery in the last two decades, the role of surgery has been well recognized in the remedy of certain sequelae of coronary occlusive disease which complicate myocardial infarction. Pacemaker implantation for complete heartblock, mitral valve replacement for papillary muscle rupture or dysfunction and ruptured chordae tendinae, and repair of post-infarction ventricular septal rupture have proved to be valuable, and often life saving procedures, which alter the course of these patients dramatically. Surgical attempts to revascularize the ischemic myocardium, however, go back for almost 60 years. Throughout this period, many new operative procedures have been received with enthusiasm, only to be followed by disappointment in their long term results. To name but a few, interruption of the sympathetic nervous pathways, thyroid ablation, carotid sinus nerve stimulation, production of vascular adhesions between the surface of the heart and another structure, internal mammary ligation, venous stasis or reversal of coronary circulation, intramyocardial implantation of a systemic artery, and acupuncture, have been advocated and largely abandoned. Coronary artery bypass surgery, developed in the late 1960's by Johnson[1] and Favaloro[2] and their colleagues, has aroused a tremendous interest, and it is estimated that approximately 50,000 of these operations will be performed in the United States this year. Looking back at the history of myocardial revascularization from our present day knowledge of the pathophysiology of the heart, one is amazed at the near ludicrous operations that have been proposed and performed. Direct coronary revascularization, on the other hand, offers a direct, logical and rational approach to the ischemic myocardium by augmenting the supply of oxygenated blood available to the area at risk.

The purpose of this communication is to review the present status of coronary artery surgery, including the indications and contraindications for the operation, the selection of bypass grafts, the results of the procedure and the outlook for patients after coronary artery revascularization.

Indications for Operation

The single most common indication for coronary artery revascularization, and yet not necessarily the most important, is severe incapaciting angina pectoris which is intractable to medicinal therapy. The procedure particularly applies to patients with a hemodynamically significant proximal block of one or more

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major coronary arteries with relatively open distal vessels and reasonable left ventricular contractility.

A high grade stenosis in either the left main coronary artery or proximal left anterior descending coronary artery upstream from the origin of the first septal artery, is probably the most important indication for reconstruction and should be considered as urgent. When such a lesion involves more than 90% narrowing of the lumen, these patients usually experience severe incapaciting angina; however even if symptoms are milder, the presence of a significant lesion in an important vessel to which collateral circulation seems to be sparse, indicates need for direct revascularization.

Most cardiologists and cardiac surgeons agree that "unstable angina" constitutes a rather urgent need for operation, although some controversy still exists. "Unstable angina" denotes a clinical syndrome in which anginal episodes occur with increasing frequency and/or severity, requiring emergency hospitalization, and all of the following criteria are met: (1) prolonged angina pectoris (more than 20 mins.); (2) pain occurring at rest; (3) pain not relieved by nitroglycerin; (4) recurrent attacks of chest pain continuing for more than 24 hours after hospitalization despite supportive measures; (5) transient electrocardiographic evidence of myocardial ischemia such as S-T depression or elevation or T-wave inversion present during at least one episode of chest pain (in occasional patients transient ventricular arrhythmias during chest pain have similar significance); and (6) no evidence of myocardial infarction by QRS changes or serum enzyme changes [serum glutamic oxaloacetic transaminase (SGOT), creatine phosphokinase (CPK) and lactate dehydrogenase (LDH)]. In patients meeting the above criteria, operation is indicated when coronary angiography and cardiac catheterization demonstrate narrowing of the luminal diameter of one or more coronary arteries by at least 75% and an ejection fraction of 30% or more. These patients may or may not have a history of prior chronic angina and/or myocardial infarction.

Contraindications: Poor left ventricular function with an ejection fraction below 0.25-0.30 is generally considered a contraindication for operation since it is associated with a high mortality rate, although occasional reports in small series of patients have indicated that a somewhat more acceptable mortality rate could be achieved.[3]

The presence of diffuse three-vessel disease and small distal vessels also is a contraindication, since it is usually associated with poor functional and angiographic results even when the operation can be achieved at an acceptable risk.

The history of recent myocardial infarction is also a contraindication to operation since it is associated with a substantially high mortality rate.[4] The mortality is highest when the infarct has occurred between 6 hours and 2 weeks prior to operation following which it gradually decreases towards the expected mortality for patients with stable angina, attaining this level when the infarct is 6-8 weeks old.

Selection of Coronary Bypass; Graft Patency Rate

The most commonly used bypass graft has been the aorto-coronary saphenous vein graft (SVG). Several institutions have reported early patency rates of 85% to 92% two weeks after operation.[5, 6] The one year patency rate of SVG's however, has been reported to be between 65% and 75% by Achuff,[7] Walker[8] and Grondin[9] and their co-workers, although the latter group have recently reported an improvement in their figures up to a one year patency rate of 85% as a result of long experience with the operation.[6] In our own experience, the SVG patency rates at two weeks and one year after operation have been 87% and 81% respectively.[5] It is gratifying that the reduction in patency after the first year is only a few percentage points.[10]

Several factors appear to affect the patency rate of vein grafts. Possibly the most important is the severity of obstructive disease in the distal arterial bed, and the amount of blood flow or run-off that can be accepted by this bed after graft placement. Grafts with flow rates of less than 20 ml/min. have a very high frequency of early closure, while those with flow rates of more than 40 ml/min. have an excellent late patency rate.[11] A higher graft occlusion rate has also been reported in women,[12] and it is generally recognized that occlusive lesions of a proliferative nature often develop in vein grafts.

The results with the internal mammary artery (IMA) as a bypass conduit have been more encouraging.[13] The advantages supporting the use of IMA's are: (1) a single artery-to-artery anastomosis is required between vessels of comparable size with a natural origin of the graft from a parent major systemic artery; (2) the similarity in size of the IMA and the recipient coronary artery tends to decrease the turbulent flow and increase the velocity of flow; (3) the IMA has a significantly higher early and late patency rate than the SVG; (4) there is less difficulty with kinking and torsion of the graft or recipient artery when IMA's are used; (5) leg wounds are avoided or minimized, and the patient with absent or unsuitable saphenous veins may be benefited; (6) IMA's are significantly less susceptible to structural alterations of subintimal hyperplasia or atheromatous degeneration. Disadvantages of IMA's with respect to SVG's are: (1) a more tedious dissection of more friable vessels is required to obtain the graft, and anastomosis is more difficult with the small, fragile, IMA; (2) the IMA is inapplicable to many distal and posterior bypass sites because of its shorter usable length and position; (3) arteriosclerotic disease in the IMA or parent subclavian artery may render the vessel unusable; (4) some have suggested a basic problem of insufficiency of flow due to the small diameter of the vessel, particularly past the 4th intercostal space.[14] Taking all these points into consideration, we use the IMA for coronary bypass whenever feasible, provided its size is equal to, or larger than, that of the recipient coronary artery, and the flow from its free dissected end exceeds 100 ml/min. When these conditions are met, our clinical and experimental studies[5, 15] indicate that SVG's and IMA grafts have similar flow rates and respond similarly to systemic administration of vasoactive drugs, and that, given the same arterial blood pressure, graft flow is primarily dependent on the distal vascular bed rather than the conduit itself. In our hands, the two-week patency rate for IMA grafts has been 99%, with no known late occlusions.[5, 16, 17] We always use SVG's for revascularization of the right coronary artery and distal left circumflex system, and we prefer the left IMA for the left anterior descending or occasionally for a diagonal branch separately involved with occlusive disease. In patients whose coronary pathology requires simultaneous grafts to the left anterior descending, and a high diagonal or marginal branch, we prefer to use crossed double IMA grafts.[16] IMA grafts are also a safe, feasible, and possibly preferable approach in patients with unstable angina.[17]

Mortality Rate of Coronary Bypass Surgery

The risk of operation in patients with stable angina pectoris appears to be around 4 per cent.[5] Probably the most important factor in determining the mortality rate in patients with stable angina is the degree of left ventricular malfunction. This is well illustrated by the data reported by Kay, et al.[18] In their study the mortality rate was related to left ventricular ejection fraction, and a mortality rate of 3% was encountered in patients with an ejection fraction of .45 to .70, 6% in patients with ejection fraction of .25 to .40, but when the ejection fraction was under .20, the mortality rate increased to 31%.

While some authors have reported a higher mortality rate for operation in patients with unstable angina,[19] our experience,[17] and that of others,[20,21] indicates that operation can be achieved in these patients at an operative risk and a mortality rate which compare favorably with those in patients with stable angina. The management of the patient with unstable angina, however, deserves special emphasis. These patients should be catheterized on an urgent basis after admission to the Coronary Care Unit, and if the coronary pathology is amenable to surgical treatment, operation should be carried out on a semi-urgent basis. These patients should be kept well sedated, and their left ventricular work should be kept at a minimum with continuous bed rest and administration of propranolol. We have found the intra-aortic balloon assist device to be extremely valuable in their management, allowing them to be weaned off Propanolol without the danger of myocardial infarction occurring between withdrawal of the drug and the scheduled operation.

The bypass operation has been carried out in a rather small number of patients with acute evolving infarction. If operation can be performed within 4 hours of the onset of a coronary occlusion, there may be some reversal of the peri infarction ischemic process, and Berg et al[22] have reported a series of 96 such patients with a combined in-hospital and first year mortality rate of 6.3%, compared to 30% with medical management. These investigators, however, did not operate on patients whose ventricular function was severely restricted and those who were stable and whose condition was uncomplicated.

Clinical and Functional Results of Coronary Bypass Surgery

Probably the most significant benefit of the coronary bypass operation at this time is the symptomatic relief of angina pectoris. In our experience, 94% of the patients had symptomatic improvement after the operation and 78% are asymptomatic.[5] This is commensurate with the experience of several other groups. Thus, for approximately 80 to 90% of the patients who survive the operation, the quality of life improves significantly. Most of these patients have been able to return to work and, from their standpoint, the operation has been highly successful.[5]

Data available from several institutions also indicate that approximately 85% of the patients achieve objective improvement as determined by stress testing, with right atrial pacing-induced tachycardia or exercise. Symptomatic and objective improvement, however, have been reported in some patients with totally occluded grafts and no residual patent grafts.[23] Thus, a placebo effect may exist, and therefore caution must be used in interpreting the data on symptomatic and objective improvement after the bypass operation. On the other hand, a fairly good correlation exists between the presence of a patent bypass graft and the degree of postoperative symptomatic and objective improvement as well as a good correlation between the return of symptoms and the occlusion of the grafts. This would indicate that increased myocardial perfusion is very likely responsible for the reduction in symptoms in many patients undergoing the bypass operation.

A more critical assessment of the value of coronary bypass can be obtained by actually determining the improvement in left ventricular function after surgery. Data available so far, however, are not conclusive. The majority of patients undergo bypass operation for incapaciting angina and if they have essentially normal left ventricular function, it will not be improved by the procedure. Also in patients who have had a myocardial infarction, one cannot expect improvement in the contraction of scar tissue. The hope is that the patient with poor left ventricular function on the basis of ischemia will demonstrate improved function after bypass operation. There is some evidence that, with moderate preoperative depression of ventricular function and postoperative graft patency, ventricular function in some patients can be improved,[24, 25] although this finding has not been uniform.

Extension of Life and Prevention of Myocardial Infarction

Patients whose clinical course is characterized by development of myocardial infarction or by progression to death as a result of infarction or electrical instability may be subdivided into asymptomatic patients and patients with stable or unstable angina.[26] Surgery has no current role in preventing infarction or sudden death in the asymptomatic patient without documented coronary artery disease. We are primarily concerned, therefore, about the possible role that surgery may have in altering the natural history pathways for patients with stable and unstable angina.

Patients with Unstable Angina. Although some controversy still exists regarding the effect of surgery on the natural course of these patients, several excellent studies[17, 19, 20, 21] indicate that at least over a period of three years, significantly improved survival figures may be achieved with surgical therapy. Additionally, these studies indicate that the infarction rate may be significantly less in the surgically treated patients. An ongoing prospective randomized study of patients with unstable angina under the sponsorship of the National Heart and Lung Institute[19] may provide data as to the best time to proceed with bypass surgery as well as to its long-term effects.

Patients with Stable Angina. Several important studies published in the last few years provide excellent data on angiographic correlation with the annual mortality rate in patients with one, two, and three vessel disease.[27, 29] These studies clearly show that the major determinant of survival in patients with angina pectoris is the severity of the coronary artery disease, and that at least two subgroups of patients with ischemic heart disease are at high risk with nonoperative therapy, namely patients with significant stenosis of the left main coronary artery and patients with extensive coronary artery disease. Data based on evaluation of patients undergoing coronary artery bypass clearly indicate the superiority of surgical management for survival of patients in these subgroups, and suggest that the operation favorably influences mortality in patients with stable angina.[26, 30]

The effects of the operation on prevention of future myocardial infarction is more difficult to ascertain. One problem has been obtaining accurate data on the incidence of nonfatal infarction in patients with stable angina on medical therapy, although the Framingham Study[31] suggests that 2 to 3% of such patients experience a nonfatal infarction each year. The incidence of perioperative infarction ranges from 2 to 22% in various reported series,[26] but most of these are not fatal and the large majority appear to be hemodynamically insignificant. The incidence of late infarction (after hospital discharge) in patients undergoing successful coronary artery bypass operations appears to be low,[26] but the exact figures are not known.

Currently, there is a prospective, randomized study of patients with stable angina at 13 institutions, including ours, under the sponsorship of the National Heart and Lung Institute.[32] The need for this study is described in Dr. Lawrence S. Cohen's preface to this symposium in this issue, and it is hoped that the data will provide some of the answers currently being sought. It is apparent that it will be several more years before we will know with certainty whether bypass surgery can reduce the incidence of myocardial infarction and improve the survival rate in subgroups of patients with stable angina where the value of surgical therapy has not been clearly evaluated.

Summary

A patient incapacitated with angina or having a significant lesion of the main left coronary or proximal left anterior descending artery but retaining excellent distal vessels and good ventricular contractility is an excellent candidate for operation. In this patient we can expect an excellent result. In contrast, a patient in congestive heart failure with few or no anginal symptoms and who has diffuse three vessel disease and small distal vessels is not a candidate for operation. This patient may receive little or no benefit from an operation which would carry an undue risk. Between these two extremes of the spectrum are patients who can expect varying results and risks to the operation, and it is hoped that the data from the cooperative randomized studies will better define the results and risks in these patients and the effect of surgery on the natural course of their disease.

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Accident Proneness or Accident Liability: Which Model for Industry?

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One of the chief aims of preventive medicine is to identify stable characteristics of persons or places which increase the likelihood of contracting disease or sustaining injury. If these characteristics, or risk factors, are shown to precede the disease or condition in question, steps may be taken to control or eradicate them. The ease at which these factors may be controlled is related to whether they exist in the person or his environment. On the whole, environmental factors are easier to control because personal habits do not have to be changed, but they are usually costly. Efforts to modify or alter personal habits are less expensive but frequently result in failure because a lifetime of patterned responses are not easily changed.

The same applies in the prevention of on the job accidents where a significant amount of money must be allocated to rid the working environment of safety hazards. Because of this, investigators were eager to search for a stable characteristic in job applicants, which could be identified prior to employment, revealing a greater propensity of having an accident. At that time, the "accident prone" individual could be identified and assigned to a non-hazardous job, decreasing the need for many costly environmental protection devices.

The primary aim of this paper is to determine whether some individuals are at greater risk of having an accident than others, exclusive of their environment. And if there are, would their elimination from the work force, reduce the frequency of accidents. Finally, if the concept of "accident proneness" is not tenable, what should the working hypothesis be toward accidents and their prevention?

Definitions

The term "accident proneness" was first coined by Farmer and Chambers.[3,4] These individuals state:

> The fact that one of the factors connected with *"accident liability"* has been found to be a peculiarity of the individual allows us to differentiate between *"accident proneness"* and *"accident liability." "Accident proneness"* is a narrower term than *"accident liability."* It means a personal idiosyncrasy predisposing the individual who possesses it in a marked degree to relatively high accident rate. *"Accident liability"* includes all the factors determining accident rate. *"Accident proneness"* refers only to those that are *personal.*

Thus the term "accident liability" describes the usual epidemiologic model for the causation of disease, i.e., multiple factors influencing a disease or an event. "Accident proneness" is an older, more mechanistic term which attempts to reduce the problem to a single cause-effect relationship.

Research Involving Accident Proneness

The first paper which appeared in the field was that by Greenwood and Woods in 1919 in which the authors studied accidents among workers in a British munitions factory during the First World War.[6] A subsequent paper by Greenwood and Yule in 1920 further developed the statistical concepts which led to the postulation of the hypothesis of accident proneness.[7] These authors were influenced by the work of von Bortkiewicz in his classic study of the distribution of death from horse kicks in the Prussian Army Corps over a twenty-year period.[9]

Greenwood considered three hypotheses: 1) that accidents occurred at random; the frequency distribution of accidents among individuals would conform to a pure chance distribution, i.e., the poisson distribution;* 2) that after incurring an accident an individual becomes more or less likely to incur another; i.e., the first accidents are distributed at random and subsequent accidents occur with unequal probabilities—the authors call this theoretical distribution the "single-biassed" distribution; 3) that there exists from the beginning a difference among the workers. Each worker has an unequal chance of having an accident; i.e., some individuals are apparently more likely to incur accidents than others, of which they called the distribution "unequally biassed."

Table 1 illustrates the frequency of accidents among 648 workers which would be predicted from the three hypotheses mentioned above, namely by chance, "single-biassed," and unequal liabilities. The authors calculated the expected frequencies using these three models, and determined how each fit the observed frequencies by use of the chi-square

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*The poisson theorem is a discrete mathematical distribution that may be regarded as an approximation of the binomial distribution when the probability of an event is small and the number of interacting units large.

Table 1

FREQUENCY DISTRIBUTION OF ACCIDENTS
AMONGST 648 WOMEN MUNITION WORKERS OVER FIVE WEEKS,
AND RESULTS FROM FITTING OF THREE THEORETICAL MODELS
(ABRIDGED FROM GREENWOOD AND YULE, 1920)

		Accident Frequency when Distribution was		
No. of Accidents Incurred	*No. of Women Incurring Accidents*	*By Chance (Poisson)*	*Single-biassed*	*Unequal Liabilities*
0	448	406	452	442
1	132	189	117	140
2	42	45	56	45
3	21 }	7 }	18 }	14 }
4	3 } 26	1 } 8.1	4 } 23	5 } 21
5	2 }	0.1 }	1 }	2 }
Total	648	648.1	648	648
	X²	61.280 v = 2	5.845 v =2	1.927 v = 1
	p	p < 0.001	0.10 > p > 0.05	0.20 > p > 0.10
	Significance	Significant	Not Significant	Not Significant

Table 2

COEFFICIENT OF CORRELATION
BETWEEN ACCIDENTS IN SUCCESSIVE PERIODS
(FROM GREENWOOD AND YULE, 1920)

Data	*Observed 3 months and Previous 3 months*	*Not Including Persons having no Accidents in Previous 3 months*
Women on heavy lathe operation	.69 ± .06	.63 ± .09
Women on heavy lathe operation engaged in 1917 or earlier	.72 ± .07	.61 ± .12
Women on profiling operation	.53 ± .09	.37 ± .14
Women on profiling operation engaged in 1917 or earlier	.37 ± .12	.18 ± .17

goodness-of-fit test.** Both single-biassed and unequal liability hypotheses fit the observed, whereas the poisson did not. Thus the distribution of accidents did not conform to the chance distribution but something other than chance. Using different combinations of the data, they determined that unequal liability fit the data best.

These authors also determined the coefficiency of correlation between accidents in two successive periods. Table 2 is a presentation of their findings. As shown, the authors counted the number of accidents in various departments during a three-month period and correlated this with those observed in the three months immediately preceding that period They found correlations quite high between accidents in one period and another, the range being .37 to .72.

In the second column (Table 2) they excluded individuals in the previous period who had no accidents, and did a second set of correlations. They reasoned that if the single-biassed distribution was correct, then there should be an increased correlation between the accidents in the two successive periods. This was not the case and they therefore concluded that the unequal liability hypothesis was the most appropriate to explain the data. This would indicate that accident proneness is a stable characteristic. The authors concluded from their study that:

> So far as our present knowledge goes, it seems that the genesis of multiple accidents under uniform external conditions is an affair of personality and not determined by any obvious extrinsic factor such as greater or lesser speed of work.

Newbold in 1926[8] repeated the work of Greenwood et al. and largely obtained the same results. She studied 6,938 men and 2,024 women and 16,188 accidents in 13 different factories. This study achieved a

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**The chi-square goodness of fit test compares an observed frequency distribution with a theoretical distribution (poisson, normal, binomial) utilizing the chi-square test. It answers the question: are the two compared distributions the same or are they significantly different? If the observed frequency "fits" the theoretical, for example the normal distribution, one can conclude that the observed event occurred by chance.

higher level of comparability than the previous two studies because accident rates in 3 different levels of employment were contrasted, but her conclusions were drawn from the pooled data in a manner similar to Greenwood and Yule. She concluded:

> It is not possible in a mass examination of this kind to find out how much of this may be due to individual differences in the conditions of work or how much to personal tendency, but there are many indications that some part, at any rate, is due to personal tendency.

Methodologic Faults

The theory of accident proneness stands on the methodology and conclusions drawn from one above works. This section will examine some of the problems encountered in the experimental design and statistical reasoning of these papers.

Errors in ascertainment—In both Greenwood et al. and Newbold's work the ascertainment of cases is based on reporting of trivial accidents to the first-aid departments of the respective companies. Of course, individuals will differ in their tendency to report such accidents, and so the tendency to report and the tendency to have accidents will be confounded.

Inequality of risk—Greenwood made no attempt to take into account the inequality of risk among the different occupations of the munitions plant. Newbold made some attempt to determine its effect, but her conclusions were based on the pooled data of all occupations. Obviously the most important factor in any design is to control for factors other than the study variable, and this was not done.

Sample size—The selection of sample size plays a role in the outcome of the predicated frequencies of the various distributions.[5] For example, in Tables 3 and 4 the theoretical distributions of 1,470 accidents versus 300 accidents are calculated for accidents occurring entirely by chance. As one can see, the distributions differ; and in the first example, 40 percent of the individuals incurred 75 percent of the accidents, and in the second, 12 percent incurred 45 percent of the accidents. In fact, the smaller the mean number of accidents, the greater this distortion.

Table 3

THEORETICAL DISTRIBUTION OF 1,470 ACCIDENTS OVER 1,060 INDIVIDUALS (CALCULATED FROM POISSON'S LIMIT) (FROM FROGGATT AND SMILEY, 1963)

No. of Accidents	*No. of Individuals*		*Total No. of Accidents Incurred*	
0	266		0	
1	368		368	
2	256	40%	512	75%
3	119		357	
4	42		168	
5	6		30	
6	3		35	
Total	1,060		1,470	

Mean = 1.39

Table 4

THEORETICAL DISTRIBUTION OF 301 ACCIDENTS OVER 500 INDIVIDUALS (CALCULATED FROM POISSON'S LIMIT) (FROM FROGGATT AND SMILEY, 1963)

No. of Accidents	*No. of Individuals*		*Total No. of Accidents Incurred*	
0	274		0	
1	165		165	
2	49	12%	98	45%
3	10		30	
4	2		8	
Total	500		301	

Mean = 0.60

Lastly, if a theoretical distribution fits an observed distribution, as does the distribution of unequal liabilities, does this mean that the hypothesis on which the distribution was based is the correct one in any circumstance? Obviously this is not the case. In both studies the only conclusion that can be drawn is that a bias exists in the distribution of accidents and they do not occur by chance alone.

Many factors would influence this, for example, type of job, fatigue, emotional upset, and maybe even a certain proneness to have an accident, but not accident proneness itself.

Implications of Accident Proneness

The true test of a hypothesis would be its application in the field. If accident proneness is a stable entity, then the frequency of accidents should drop if individuals with the worst accident records are systematically excluded from future exposure. Table 5 from Adelstein's data reveals that this is not the case.[1] He removed the 10 individuals with the highest number of accidents after the first year of a three-year period and found no decrease in the accident rate for the remaining 94 men. The mean accident rates for 104 men in the first year was .557; second year, .355; third year, .317. After removing the 10 men with the highest rate in the first year, the remaining 94 men had .393 accidents in the first year, .361 accidents in the 2nd year, and .329 accidents in the 3rd year. The annual accident rate in the second and third years actually went up after removal of the 10 men who had the most accidents during the first year.

Table 5

EFFECT OF REMOVING THE MEN
WITH THE HIGHEST ACCIDENT RATE IN THE FIRST YEAR
(ABRIDGED FROM ADELSTEIN, 1952)

Average Accident Rate for Shunters joining in 1944	*First Year*	*Second Year*	*Third Year*
For all 104 men	0.557	0.355	0.317
If worst 10 for the first year were removed—94 men	0.393	0.361	0.329

Table 6 from Farmer and Chambers reveals the effect of removing individuals who had a high accident rate during their first year and those judged prior to employment as having poor coordination and thus more accident prone.[4] As we can see, the reduction effect is rather disappointing, and this is from authors who were committed to the concept of "accident proneness."

Table 6

EFFECT ON SUBSEQUENT ACCIDENT RATE
OF REMOVING DRIVERS WITH
(1) MANY ACCIDENTS IN THEIR FIRST YEAR, OR
(2) POOR AESTHETO-KINETIC CO-ORDINATION
(ABRIDGED FROM FARMER AND CHAMBERS, 1939)

Action	*Drivers Removed (%)*	*Accident Rate (%)*	*Reduction Effected (%)*
Accident rate for whole group for all years except the first		100	
(1) After removing drivers with 3 or more accidents in the first year	28	91	9
(2) After removing the worst 25% in the tests	23	93	7
(3) Combining (1) and (2)	44	87	13

Working Hypothesis for Industry

From what has been demonstrated above, accident proneness comprises a very small proportion of those persons with an unsatisfactory accident record, and that accident proneness, changes with time and is not a stable entity.

Thus a more attractive approach to the prevention of repeated accidents would be that of *"accident liability"* as defined at the very onset of this paper. Liability or the tendency to have an accident varies from time to time *within* persons as well as *between* persons, and is dependent upon the changing severity of the environment and temperament of the individual.[2]

Thus, preventive measures, aimed at controlling accidents, must take into account: host, agent and environmental factors. Thus, corporate safety programs should be comprehensive enough to address their efforts at prevention in these three areas. Behavior modification via safety indoctrination, alcohol restriction and psychologic counseling should be used to reduce individual accident liability. Guarding of machines and the use of hoists are ways of ameliorating agent effects. Finally, good lighting and plant housekeeping are examples of insuring that an adequate environment exists in which work may be performed.

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Rating Pediatric House Officer Performance

Carmi Z. Margolis, M.D., M.A., and Charles D. Cook, M.D.

Abstract—A practical and reproducible clinical performance rating between 1 (excellent) and 4 (unsatisfactory), which consisted of the mean of the scores of at least seven faculty members, was calculated for each of 59 pediatric house officers on a medical school teaching service. For many house officers these ratings were repeated periodically during several years of training. The mean house staff initial rating was 1.93 (range 1.16 to 3.30). The ratings correlated neither with Pediatric Board pretest or regular scores nor with intern matching plan rankings. Six criteria of performance were independently listed by a majority of the faculty members as the basis for their ratings. It was concluded that both cognitive and behavioral criteria are important for the evaluation of the clinical performance of house officers.

The development of criteria for evaluating the performance of house officers should be an integral part of the training responsibility of the staff of a teaching hospital. This report presents such criteria and the results of applying these to the evaluation of 59 trainees on the pediatric service of a major teaching hospital. In addition, the performance ratings of the house officers are compared to their matching plan rankings and to their Pediatric Board pretest or regular test scores in the 38 instances where these were available.

Setting and Methods

All 59 house officers on the Pediatric Service of the Yale-New Haven Hospital during a period of three academic years starting July, 1971, were evaluated in respect to their clinical performance (cf. below); 37 of these were evaluated at least twice, while 13 were evaluated four times. Forty-two of the house officers were initially evaluated as first year residents (PL-1), while the remaining 17 were first evaluated as second or third year (PL-2 or PL-3) residents. First year residents are accepted via the matching plan from a pool of about 175 applicants and go on to make up the major proportion of the more senior resident groups (68% of those evaluated during their second or third years).

The hospital where these house officers worked is a major teaching institution which serves as both a community and a referral hospital; hence the trainees are exposed to both common and unusual pediatric problems. First year residents spend three rotations on a newborn service (both normal and abnormal newborn infants are cared for), one in clinic, nine on general pediatric wards, and one at an institution for retarded children. They are the only physicians who may write orders and they assume primary responsibility for their patients who are both private and non-private and medical and non-medical. Second year residents spend half a year as the house officer in charge of a ward and of the nursery and half in charge of the emergency room and in the clinic. Third year residents spend four months in charge of the intensive care unit and toddler floor, and the rest of the year as senior resident or on electives.

All of the first year residents for two successive academic years (total = 27), starting in July of 1971, took the American Board of Pediatrics pretest,[1] a multiple choice examination designed to evaluate general knowledge of pediatrics, during the summer of their first post-graduate clinical year. Sixteen of these, who stayed on the service for a second year, took another pretest at the beginning of that year. Scores from the regular written board examination, which is identical to the pretest given two months later, are also available for two of these 27 house officers and for an additional 11 whose clinical performance had been rated by the faculty (cf. below).

In February, 1972, 13 members of the full-time pediatric staff who were intimately involved in house officer teaching, including a neonatologist, a child psychiatrist, a pediatrician-sociologist, two hematologists, two geneticists, a general pediatrician, a specialist in adolescent medicine, two full-time clinic pediatricians, the chief resident, and the department chairman rated the entire house staff. They were instructed to rate all house officers whom they knew well, according to the following scale: (1) excellent, (2) competent, (3) definite problem in performance, and (4) unsatisfactory performance. Individuals whose performances fell between the categories described above were given a rating of 1.5, 2.5 or 3.5. A house officer's final rating was the mean of all faculty scores given to him.

After the faculty had rated the house officers, the dimensions of the evaluation instrument were deter-

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mined by asking each faculty member to list the criteria upon which his evaluation had been based.

In June, 1972, ten of the original faculty and two additional faculty members rated the same 27 house officers according to the same rating scale. Again in January and May of 1973, ten of the original and five new faculty members rated the entire pediatric house staff which included 13 of the original group. A similar evaluation of the clinical performance of all pediatric house officers was carried out in April, 1974.

Results

Performance Criteria

Six criteria of performance were listed by a majority of the faculty members as those qualities on which they graded all house officers; three additional criteria were deemed appropriate for residents (Table 1).

TABLE 1

PERFORMANCE CRITERIA FOR HOUSE OFFICERS

Criteria for all house staff
Compassion
Pediatric knowledge
Dependability
Critical attitude
Ability to work as team member
Efficiency

Criteria for residents
Teaching ability
Ability to lead a team and supervise interns
Ability to supervise interns

Evaluation

A house officer's score was obtained by averaging his ratings and had an average standard error of .181. Rater reliability for the 10 faculty members who rated the same house officers on the first two occasions averaged .73 (range, .48 to .88). At the same time interrater reliability averaged .90. The mean group rating for the initial evaluation of all first year residents was 1.96 (range, 1.20 to 3.15). The frequency distribution of the initial rating of each of the 59 house officers is shown in Figure 1.

Evaluation of 37 house officers on at least two occasions (Figure 2) provided an index of stability of the rating: The correlation between the first and second evaluations was .939; between the first and third evaluation .888. Mean ratings for the 13 house officers who were rated four times over 15 months showed no significant change with time (averages were 2.16, 2.27, 2.30 and 2.10 respectively). Either the house officers did not improve or, more reasonably, the expectations for performance changed with length of training and performance stayed approximately constant in relation to those expectations.

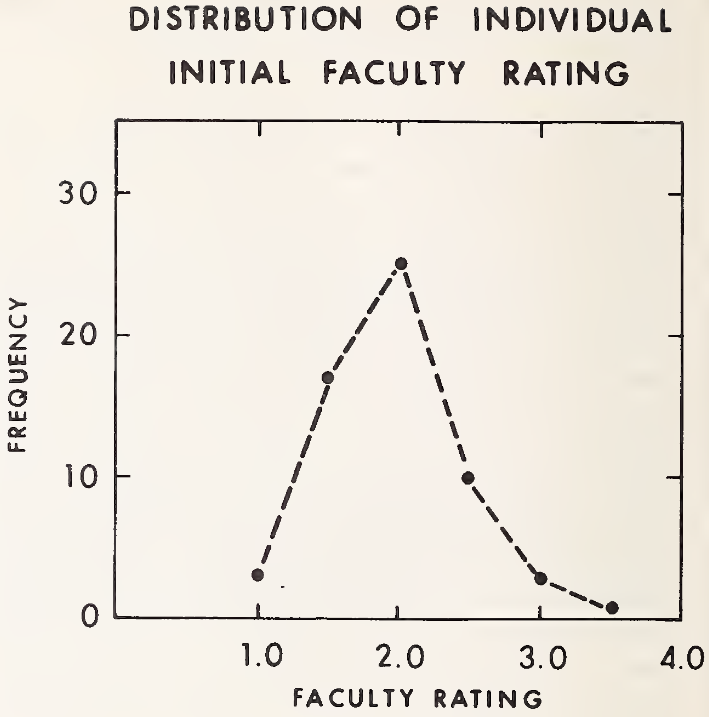

Figure 1

Distribution of Initial Faculty Rating of 59 Pediatric House Officers (1, excellent; 2, competent; 3, definite problem in performance; 4, unsatisfactory performance).

The relative rankings of the individuals in relation to their fellow house officers changed little: all four initially top-ranked house officers remained in the top four positions; the four lowest ranked house officers continued to be in the bottom four positions.

Correlation of Internship Rankings with Faculty Evaluation and Test Scores

There was no correlation between the intern matching plan rankings that had been assigned to house staff applicants by the faculty and the faculty evaluation of performance (r = .160, n = 42) or board scores (r = .316, n = 29).

Correlation of Faculty Evaluation with Pediatric Board Examinations

The house officers' scores on their American Board of Pediatrics pretest or regular examination were compared with the faculty rating (Figure 3) which was closest in time to the test. There was no significant correlation between the two types of evaluation (correlation coefficient = -.269, n = 38). Three house officers who scored above the 90th percentile on the board exams were among the lowest on the faculty clinical performance evaluation (3.18, 3.05, and 2.95), while two of the three who scored lowest on the pretest (below the 27th percentile) scored in the average range for performance (1.70 and 2.05). Since the six house officers going into non-pediatric specialties (psychiatry, surgery, pharmacology, and anesthesiology) scored among the lowest on the pretest, a corre-

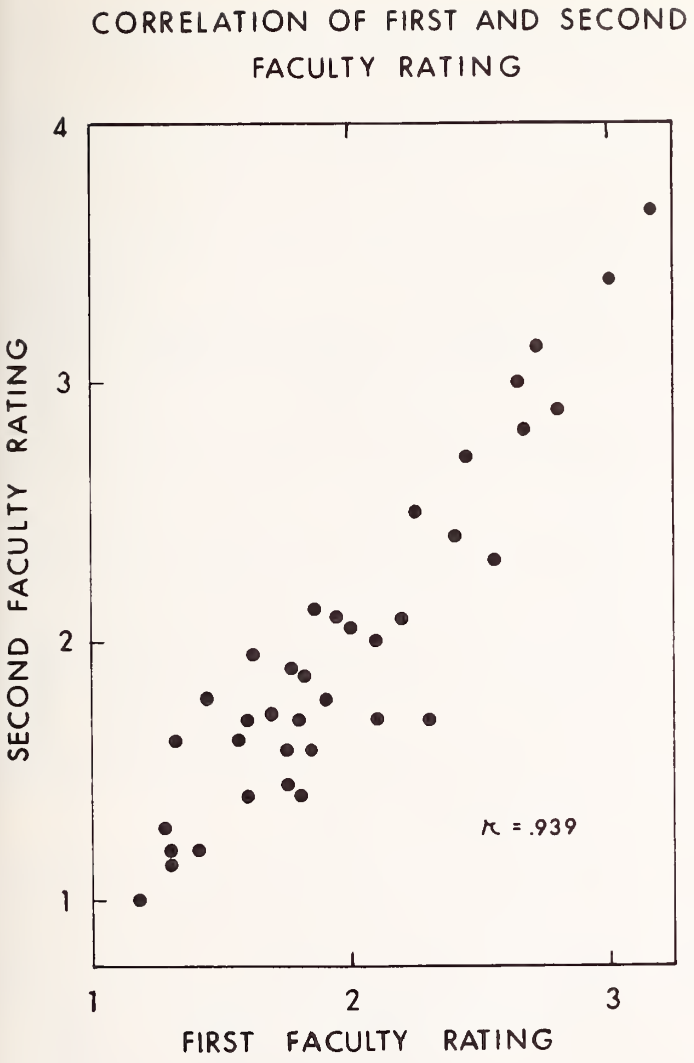

Figure 2
Correlation of First and Second Faculty Rating

lation coefficient for only the 32 interested primarily in pediatrics was calculated but was also non-significant (r = -.252). (Figure 3.)

Sixteen house officers took the pretest both at the beginning of their first and their second years of residency and showed a significant (p = < .02) increase in their scores (from an average of 361 to 447), although the mean clinical performance evaluations of these 16 were approximately the same during their first and their second years (2.15 and 2.13 respectively).

Discussion

In caring for patients, a physician is required to use cognitive, affective and motor skills. Some of these skills may best be evaluated in a classroom setting; others must be evaluated as the physician performs patient care. Parts I and II of National Boards use objective examinations to evaluate cognitive skills; Werner and Schneider[2] use ratings to estimate effective interviewing skills, and Hillman, et al[3] use ratings to evaluate physical examination motor skills. McGuire and Solomon's[4] patient management problems attempt to simulate a clinical situation and, therefore, to estimate a physician's clinical performance without requiring him actually to perform patient care. Rexler[5] has attempted to adapt simulation to the estimation of affective performance. Barrows and Bennett's[6] live simulation could be used to measure cognitive, affective, or motor performance. Chart audit[7],[8] especially in a problem-oriented format, has been used to measure actual cognitive performance, but there have been few attempts to measure either affective, motor, or total performance. Howell's[9] study of federal physicians' effectiveness, using supervisor ratings, and Price et al's[10] measurement of patient outcome are attempts to measure total performance.

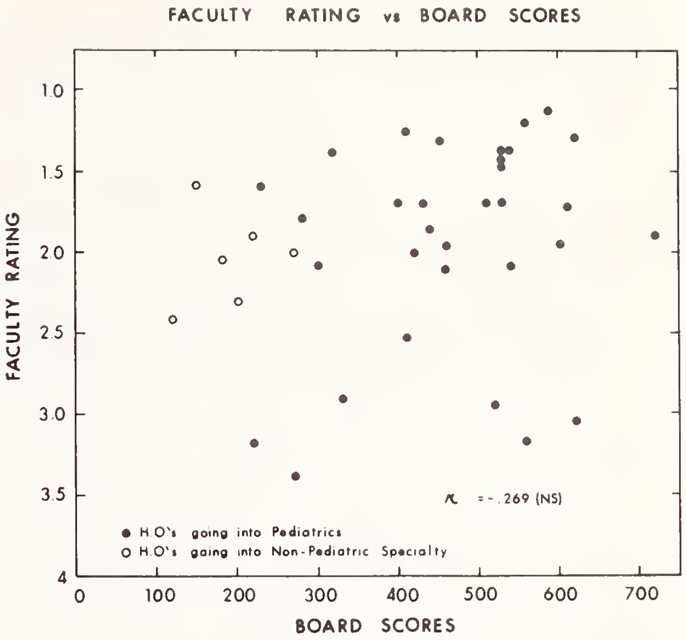

Figure 3
Comparison of Pediatric Board Scores and Faculty Rating (1, excellent; 2, competent; 3, definite problem in performance; 4, unsatisfactory performance).

A serious difficulty in evaluating clinical performance has been the lack of accepted criteria. Though Sanazaro and Williamson[11] have used a critical incident technique to define cognitive and affective performance, such a technique is difficult to adapt to routine evaluation of house officer performance. After some testing, it appeared to us that, for purposes of the present study, it was most practical to grade numerically overall performance even though this grade involved the integration of a number of quite different criteria.

If one examines the faculty's performance criteria, one notes great emphasis on affective or non-cognitive components of performance. This emphasis is similar to that of Shattuck[12] who, in 1907, pointed to knowledge, thoroughness, judgment, character, enthusiasm, sympathy and integrity as the seven elements of physician success. Shattuck's omission of critical attitude and teamwork, and our faculty's omission of enthusiasm, may reflect a shift in criteria for physician performance that parallels the relatively recent emphasis on team medical care, and clinical research.

A listing of the educational objectives prepared by the faculty before this study emphasized cognitive skills, such as knowledge of specific areas of pediatrics and clinical judgment. In comparing the objectives to the faculty's clinical performance criteria, it appeared that the faculty's expectation of superior performance in the area of affective skills is not made clear to a house officer at the beginning of his training. A house officer may be told he is expected to learn how to diagnose and treat pediatric diseases and then be reprimanded for not working effectively with a social worker or for not showing adequate empathy with patients or parents. It would seem reasonable that all criteria, both cognitive and affective, for judging the overall clinical performance of a pediatric house officer be clearly stated by the pediatric faculty. Although attempts to specify such criteria have been made,[13] many pediatric training programs have probably not explicitly defined or adequately communicated them to their trainees.

Average faculty ratings assigned by this method were rapidly determined and reproducible. The mean initial rating of 1.93 and the wide range of ratings (1.16 to 3.30) on a 4 point scale indicate that the ratings describe a broad range of overall performance. However, one may not conclude that because faculty are able to evaluate reliably the sum of a physician's abilities, they can assess specific performance abilities, such as compassion or dependability. In fact, ratings of the specific skills of Canadian family physicians seem to be colored by the rater's impression of general performance.[14] Reliability was also measured by determining stability of the ratings over time. One would expect that house officer ratings might change early in the internship, but then would probably stabilize. We could only demonstrate that ratings at six months seemed to have already stabilized.

Relation of Faculty Ratings to Board Scores and Internship Rankings

We were not able to show any correlation between faculty ratings of house officer performance and the Pediatric Board or Board pretest scores, or between rankings for the intern-matching plan and their subsequent faculty ratings. It appears, therefore, that (in this selected group) not only is a factual knowledge of medicine at the beginning of an internship not predictive of clinical performance, but house officer clinical performance is also not predictive of Board scores. A similar lack of correlation between measures of cognition and subsequent clinical performance ratings has been demonstrated for medical students, teachers, and orthopedic residents.[15-17] But perhaps more disturbing is the fact that the prospective house officer's medical school evaluations and interviews, upon which intern rankings were based, did not predict subsequent performance. One might argue that medical school evaluations are intended only to predict lack of failure, that none of our house officers were dismissed, and that our evaluations therefore only differentiated finely between degrees of excellence. However, the house officers who received a rating of three or more were having problems so serious that a few were almost dismissed. We, therefore, feel that the prospective intern's medical school evaluations barely predicted lack of failure. What we do not know is whether or not the higher ranked unmatched applicants and those unranked, making up 75% of the total number of applicants, would have performed adequately or inadequately. Since our performance rating depended on *both* cognitive and affective skills, we conclude that if medical schools and pediatric Board examinations are to predict actual clinical performance, they must develop measures of affective skills and of performance that are as reliable as existing measures of cognitive skills.

In summary, a system for evaluating overall clinical performance has been applied to the assessment of the work of 59 pediatric house officers in a major teaching hospital and found reproducible. The performance ratings did not have a significant correlation with the individual's ranking in the intern-matching plan or his or her pediatric Board exam scores. Both cognitive and non-cognitive criteria were considered of major importance in arriving at the evaluation of the house officer's effectiveness as a physician.

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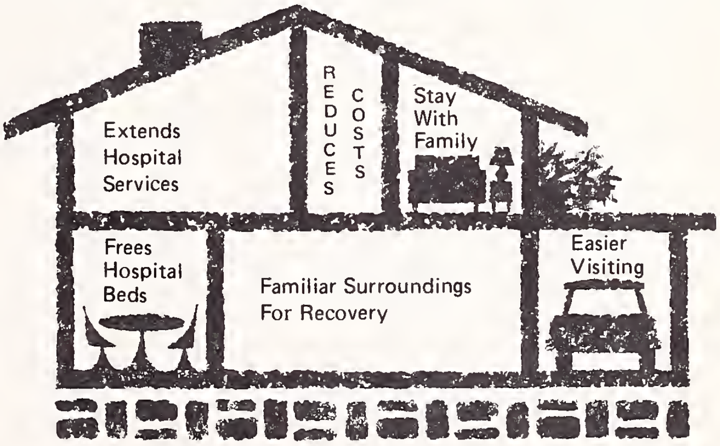

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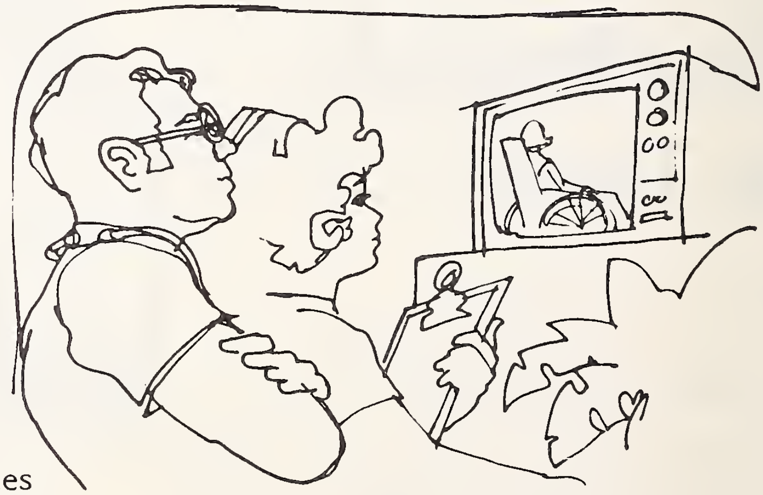

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The Care of the Patient

Francis W. Peabody, M.D.

Francis Peabody gave this talk about 47 years ago to a Harvard Medical School graduating class. He was a great teacher, physician and man. It has become a classic among such talks on the subject because of its understanding and compassion, which cannot help but inspire even the most cynical of men, let alone physicians. It has been reproduced many times, but it still deserves a place in *Connecticut Medicine* for our physicians to be nourished by the thoughts of a great physician.

—EDITOR'S NOTE.

It is probably fortunate that most systems of education are constantly under the fire of general criticism, for if education were left solely in the hands of teachers the chances are good that it would soon deteriorate. Medical education, however, is less likely to suffer from such stagnation, for whenever the lay public stops criticizing the type of modern doctor, the medical profession itself may be counted on to stir up the stagnant pool and cleanse it of its sedimentary deposit. The most common criticism made at present by older practitioners is that young graduates have been taught a great deal about the mechanism of disease but little about the practice of medicine—or, to put it more bluntly, they are too "scientific" and do not know how to take care of patients.

One is, of course, somewhat tempted to question how completely fitted for his life work the practitioner of the older generation was when he first entered on it, and how much the haze of time has led him to confuse what he learned in the school of medicine with what he acquired in the harder school of experience. But the indictment is a serious one and it is concurred in by numerous recent graduates, who find that in the actual practice of medicine they encounter many situations which they had not been led to anticipate and which they are not prepared to meet effectively. Where there is so much smoke, there is undoubtedly a good deal of fire, and the problem for teachers and for students is to consider what they can do to extinguish whatever is left of this smoldering distrust.

To begin with, the fact must be accepted that one cannot expect to become a skillful practitioner of medicine in the four or five years allotted to the medical curriculum. Medicine is not a trade to be learned but a profession to be entered. It is an ever widening field that requires continued study and prolonged experience in close contact with the sick. All that the medical school can hope to do is to supply the foundations on which to build. When one considers the amazing progress of science in its relation to medicine during the last thirty years, and the enormous mass of scientific material much must be made available to the modern physician, it is not surprising that the schools have tended to concern themselves more and more with this phase of the educational problem. And while they have been absorbed in the difficult task of digesting and correlating new knowledge, it has been easy to overlook the fact that the application of the principles of science to the diagnosis and treatment of disease is only one limited aspect of medical practice. The practice of medicine in its broadest sense includes the whole relationship of the physician with his patient. It is an art, based to an increasing extent on the medical sciences, but comprising much that still remains outside the realm of any science. The art of medicine and the science of medicine are not antagonistic but supplementary to each other. There is no more contradiction between the science of medicine and the art of medicine than between the science of aeronautics and the art of flying. Good practice presupposes an understanding of the sciences which contribute to the structure of modern medicine, but it is obvious that sound professional training should include a much broader equipment.

The problem that I wish to consider, therefore, is whether this larger view of the profession cannot be approached even under the conditions imposed by the present curriculum of the medical school. Can the practitioner's art be grafted on the main trunk of the fundamental sciences in such a way that there may arise a symmetrical growth, like an expanding tree, the leaves of which shall be for the "healing of the nations?"

One who speaks of the care of patients is naturally thinking about circumstances as they exist in the practice of medicine; but the teacher who is attempting to train medical students is immediately confronted by the fact that, even if he would, he cannot

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DR. FRANCIS W. PEABODY was Professor of Medicine at Harvard and Director of the Thorndike Memorial Laboratory at Boston City Hospital. He died in 1927 at the age of 46. This article, originally delivered as a talk to the students at Harvard Medical School was first published in JAMA, 1927, 88:877 and is reprinted here with permission.

make the conditions under which he has to teach clinical medicine exactly similar to those of actual practice.

Where Young Doctors Fail

The primary difficulty is that instruction has to be carried out largely in the wards and dispensaries of hospitals rather than in the patient's home and the physician's office. Now the essence of the practice of medicine is that it is an intensely personal matter, and one of the chief differences between private practice and hospital practice is that the latter always tends to become impersonal. At first sight this may not appear to be a very vital point, but it is, as a matter of fact, the crux of the whole situation. The treatment of a disease may be entirely impersonal; the care of a patient must be completely personal. The significance of the intimate personal relationship between physician and patient cannot be too strongly emphasized, for in an extraordinarily large number of cases both diagnosis and treatment are directly dependent on it, and the failure of the young physician to establish this relationship accounts for much of his ineffectiveness in the care of patients.

Hospitals, like other institutions founded with the highest human ideals, are apt to deteriorate into dehumanized machines, and even the physician who has the patient's welfare most at heart finds that pressure of work forces him to give most of his attention to the critically sick and to those whose diseases are a menace to the public health. In such cases he must first treat the specific disease, and there then remains little time in which to cultivate more than a superficial personal contact with the patients. Moreover, the circumstances under which the physician sees the patient are not wholly favorable to the establishment of the intimate personal relationship that exists in private practice, for one of the outstanding features of hospitalization is that it completely removes the patient from his accustomed environment. This may, of course, be entirely desirable, and one of the main reasons for sending a person into the hospital is to get him away from home surroundings, which, be he rich or poor, are often unfavorable to recovery; but at the same time it is equally important for the physician to know the exact character of these surroundings.

Everybody, sick or well, is affected in one way or another, consciously or subconsciously, by the material and spiritual forces that bear on his life, and especially to the sick, such forces may act as powerful stimulants or depressants. When the general practitioner goes into the home of a patient, he may know the whole background of the family life from past experience; but even when he comes as a stranger he has every opportunity to find out what manner of man his patient is, and what kind of circumstances make his life. He gets a hint of financial anxiety or of domestic incompatibility; he may find himself confronted by a querulous, exacting, self-centered patient, or by a gentle invalid overawed by a dominating family; and as he appreciates how these circumstances are reacting on the patient he dispenses sympathy, encouragement, or discipline. What is spoken of as a "clinical picture" is not just a photograph of a man sick in bed; it is an impressionistic painting of the patient surrounded by his home, his work, his relations, his friends, his joys, sorrows, hopes and fears. Now, all of this background of sickness which bears so strongly on the symptomatology is liable to be lost sight of in the hospital: I say "liable to" because it is not by any means always lost sight of, and because I believe that by making a constant and conscious effort, one can almost always bring it out into its proper perspective. The difficulty is that in the hospital one gets into the habit of using the oil immersion lens instead of the low power, and focuses too intently on the center of the field.

When a patient enters a hospital, one of the first things that commonly happens to him is that he loses his personal identity. He is generally referred to, not as Henry Jones, but as "that case of mitral stenosis in the second bed on the left." There are plenty of reasons why this is so, and the point is, in itself, relatively unimportant; but the trouble is that it leads, more or less directly, to the patient being treated as a case of mitral stenosis, and not as a sick man. The disease is treated, but Henry Jones, lying awake nights while he worries about his wife and children, represents a problem that is much more complex than the pathologic physiology of mitral stenosis, and he is apt to improve very slowly unless a discerning intern discovers why it is that even large doses of digitalis fail to slow his heart rate. Henry happens to have heart disease, but he is not disturbed so much by dyspnea as he is by anxiety for the future, and a talk with an understanding physician who tries to make the situation clear to him, and then gets the social service worker to find a suitable occupation, does more to straighten him out than a book full of drugs and diets. Henry has an excellent example of a certain type of heart disease, and he is glad that all the staff find him interesting, for it makes him feel that they will do the best they can to cure him; but just because he is an interesting case he does not cease to be a human being with very human hopes and fears. Sickness produces an abnormally sensitive emotional state in almost everyone, and in many cases the emotional state repercusses, as it were, on the organic disease.

The pneumonia, for example, would probably run its course in a week regardless of treatment, but the experienced physician knows that by quieting the cough, getting the patient to sleep, and giving a bit of encouragement, he can save his patient's strength and lift him through many distressing hours. The institutional eye tends to become focused on the lung, and it forgets that the lung is only one member of the body.

A Serious Error of Teachers

But if teachers and students are liable to take a limited point of view even toward interesting cases of organic disease, they fall into much more serious error in their attitude toward a large group of patients who do not show objective, organic pathologic conditions, and who are generally spoken of as having "nothing the matter with them." Up to a certain point, as long as they are regarded as diagnostic problems, they command attention; but as soon as a physician has assured himself that they do not have organic disease, he passes them over lightly.

Take the case of a young woman, for instance, who entered the hospital with a history of nausea and discomfort in the upper part of the abdomen after eating. Mrs. Brown had "suffered many things of many physicians." Each of them gave her a tonic and limited her diet. She stopped eating everything that any of her physicians advised her to omit, and is now living on a little milk with a few crackers; but her symptoms persist. The history suggests a possible gastric ulcer or gallstones, and with a proper desire to study the case thoroughly, she is given a test meal, gastric analysis and duodenal intubation, and roentgen-ray examinations are made of the gastrointestinal tract and gallbladder. All of these diagnostic methods give negative results; that is, they do not show evidence of any structural change. The case immediately becomes much less interesting than if it had turned out to be a gastric ulcer with atypical symptoms. The visiting physician walks by and says "Well, there's nothing the matter with her." The clinical clerk says "I did an awful lot of work on that case and it turned out to be nothing at all." The intern, who wants to clear out the ward to make room for some interesting cases, says "Mrs. Brown, you can send for your clothes and go home tomorrow. There really is nothing the matter with you, and fortunately you have not got any of the serious troubles we suspected. We have used all the most modern and scientific methods, and we find that there is no reason why you should not eat anything you want to. I'll give you a tonic to take when you go home." Same story, same colored medicine! Mrs. Brown goes home, somewhat better for her rest in new surroundings, thinking that nurses are kind and physicians are pleasant, but that they do not seem to know much about the sort of medicine that will touch her trouble. She takes up her life and the symptoms return—and then she tries chiropractic, or perhaps Christian Science.

It is rather fashionable to say that the modern physician has become "too scientific." Now, was it too scientific, with all the stomach tubes and blood counts and roentgen-ray examinations? Not at all. Mrs. Brown's symptoms might have been due to a gastric ulcer or to gallstones, and after such a long course it was only proper to use every method that might help to clear the diagnosis. Was it, perhaps, not scientific enough? The popular conception of a scientist as a man who works in a laboratory and who uses instruments of precision is as inaccurate as it is superficial, for a scientist is known, not by his technical processes, but by his intellectual processes; and the essence of the scientific method of thought is that it proceeds in an orderly manner toward the establishment of a truth. Now the chief criticism to be made of the way Mrs. Brown's case was handled is that the staff was contented with a half truth. The investigation of the patient was decidedly unscientific in that it stopped short of even an attempt to determine the real cause of the symptoms. As soon as organic disease could be excluded the whole problem was given up, but the symptoms persisted. Speaking candidly, the case was a medical failure although the patient went home assured that there was "nothing the matter" with her.

A good many "Mrs. Browns," male and female, come to hospitals, and a great many more go to private physicians. They are all characterized by the presence of symptoms that cannot be accounted for by organic disease, and they are all liable to be told that they have "nothing the matter" with them. Now my own experience as a hospital physician has been rather long and varied, and I have always found that, from my point of view, hospitals are particularly interesting and cheerful places; but I am fairly certain that, except for a few low grade morons and some poor wretches who want to get in out of the cold, there are not many people who become hospital patients unless there is something the matter with them. And, by the same token, I doubt whether there are many people, except for those stupid creatures who would rather go to the physician than to the theater, who spend their money on visiting private physicians unless there is something the matter with them. In hospital and in private practice, however, one finds this same type of patient, and many physicians whom I have questioned agree in saying that, excluding cases of acute infection, approximately half of their patients complained of symptoms for which an adequate organic cause could not be discovered. Numerically, then, these patients constitute a large group, and their fees go a long way toward spreading butter on the physician's bread. Medically speaking, they are not serious cases as regards prospective death, but they are often extremely serious as regards prospective life. Their symptoms will rarely prove fatal, but their lives will be long and miserable, and they may end by nearly exhausting their families and friends. Death is not the worst thing in the world, and to help a man to a happy and useful career may be more of a service than the saving of life.

The Symptoms of Stage Fright

What is the matter with all these patients? Technically, most of them come under the broad heading of the "psychoneuroses"; but for practical purposes many of them may be regarded as patients whose subjective symptoms are due to disturbances of the physiologic activity of one or more organs or systems. These symptoms may depend on an increase or a decrease of a normal function, on an abnormality of function, or merely on the subjects becoming conscious of a wholly normal function that normally goes on unnoticed; and this last conception indicates that there is a close relation between the appearance of the symptoms and the threshold of the patient's nervous reactions. The ultimate causes of these disturbances are to be found, not in any gross structural changes of the organs involved, but rather in nervous influences emanating from the emotional or intellectual life, which, directly or indirectly, affect in one way or another organs that are under either voluntary or involuntary control.

All of you have had experiences that have brought home the way in which emotional reactions affect organic functions. Some have been nauseated while anxiously waiting for an important examination to begin, and a few may even have vomited; others have been seized by an attack of diarrhea under the same circumstances. Some have had polyuria before making a speech, and others have felt thumping extrasystoles or a pounding tachycardia before a football game. Some have noticed rapid shallow breathing when listening to a piece of bad news, and others know the type of occipital headache, with pain down the muscles of the back of the neck, that comes from nervous anxiety and fatigue.

These are all simple examples of the way that emotional reactions may upset the normal functioning of an organ. Vomiting and diarrhea are due to abnormalities of the motor function of the gastrointestinal tract—one to the production of an active reversed peristalsis of the stomach and a relaxation of the cardiac sphincter, the other to hyperperistalsis of the large intestine. The polyuria is caused by vasomotor changes in renal circulation,[1] similar in character to the vasomotor changes that take place in the peripheral vessels in blushing and blanching of the skin, and in addition there are quite possibly associated changes in the rate of blood flow and in blood pressure. Tachycardia and extrasystoles indicate that not only the rate but also the rhythm of the heart is under a nervous control that can be demonstrated in the intact human being as well as in the experimental animal. The ventilatory function of the respiration is extraordinarily subject to nervous influences; so much so, in fact, that the study of the respiration in man is associated with peculiar difficulties. Rate, depth, and rhythm of breathing are easily upset by even minor stimuli, and in extreme cases the disturbance in total ventilation is sometimes so great that gaseous exchange becomes affected. Thus, I remember an emotional young woman who developed a respiratory neurosis with deep and rapid breathing, and expired so much carbon dioxide that the symptoms of tetany ensued. The explanation of the occipital headaches and of so many pains in the muscles of the back is not entirely clear, but they appear to be associated with changes in muscular tone or with prolonged states of contraction. There is certainly a very intimate correlation between mental tenseness and muscular tenseness, and whatever methods are used to produce mental relaxation will usually cause muscular relaxation, together with relief of this type of pain. A similar condition is found in so-called writers' cramp, in which the painful muscles of the hand result, not from manual work, but from mental work.

One might go much further, but these few illustrations will suffice to recall the infinite number of ways in which physiologic functions may be upset by emotional stimuli, and the manner in which the resulting disturbances of function manifest themselves as symptoms. These symptoms, although obviously not due to anatomic changes, may, nevertheless, be very disturbing and distressing, and there is nothing imaginary about them. Emotional vomiting is just as real as the vomiting due to pyloric obstruction, and so-called "nervous headaches" may be as painful as if they were due to a brain tumor. Moreover, it must be remembered that symptoms based on functional disturbances may be present in a patient who has, at the same time, organic disease, and in such cases the determination of the causes of the different symptoms may be an extremely difficult matter.

Everyone accepts the relationship between the common functional symptoms and nervous reactions, for convincing evidence is to be found in the fact that under ordinary circumstances the symptoms disappear just as soon as the emotional cause has passed. But what happens if the cause does not pass away? What if, instead of having to face a single three-hour examination, one has to face a life of being constantly on the rack? The emotional stimulus persists, and continues to produce the disturbances of function. As with all nervous reactions, the longer the process goes on, or the more frequently it goes on, the easier it is for it to go on. The unusual nervous tract becomes an established path. After a time, the symptom and the subjective discomfort that it produces comes to occupy the center of the picture, and the causative factors recede into a hazy background. The patient no longer thinks "I cannot stand this life," but he says out loud "I cannot stand this nausea and vomiting. I must go to see a stomach specialist."

Why Internists Should Treat Neurotics

Quite possibly your comment on this will be that the symptoms of such "neurotic" patients are well known, and they ought to go to a neurologist or a psychiatrist and not to an internist or a general practitioner. In an era of internal medicine, however, which takes pride in the fact that it concerns itself with the functional capacity of organs rather than with mere structural changes and which has developed so many "functional tests" of kidneys, heart, and liver, is it not rather narrow minded to limit one's interest to those disturbances of function which are based on anatomic abnormalities? There are other reasons, too, why most of these "functional" cases belong to the field of general medicine. In the first place, the differential diagnosis between organic disease and functional disturbance is often extremely difficult, and it needs the broad training in the use of general clinical and laboratory methods which forms the equipment of the internist. Diagnosis is the first step in treatment. In the second place, the patients themselves frequently prefer to go to a medical practitioner rather than to a psychiatrist, and in the long run it is probably better for them to get straightened out without having what they often consider the stigma of having been "nervous" cases. A limited number, it is true, are so refractory or so complex that the aid of the psychiatrist must be sought, but the majority can be helped by the internist without highly specialized psychologic technique, if he will appreciate the significance of functional disturbances and interest himself in their treatment. The physician who does take these cases seriously—one might say scientifically—has the great satisfaction of seeing some of his patients get well, not as the result of drugs or as the result of the disease having run its course, but as the result of his own individual efforts.

Here, then, is a great group of patients in which it is not the disease but the man or woman who needs to be treated. In general hospital practice physicians are so busy with the critically sick, and in clinical teaching are so concerned with training students in physical diagnosis and attempting to show them all types of organic disease, that they do not pay as much attention as they should to the functional disorders. Many a student enters practice having hardly heard from them except in his course in psychiatry, and without the faintest conception of how large a part they will play in his future practice. At best, his method of treatment is apt to be a cheerful reassurance combined with a placebo. The successful diagnosis and treatment of these patients, however, depends almost wholly on the establishment of that intimate personal contact between physician and patient which forms the basis of private practice. Without this, it is quite impossible for the physician to get an idea of the problems and troubles that lie behind so many functional disorders. If students are to obtain any insight into this field of medicine, they must also be given opportunities to build up the same type of personal relationship with their patients.

A Personal Relationship

Is there, then, anything inherent in the conditions of clinical teaching in a general hospital that makes this impossible? Can you form a personal relationship in an impersonal institution? Can you accept the fact that your patient is entirely removed from his natural environment and then reconstruct the background of environment from the history, from the family, from a visit to the home or workshop, and from the information obtained by the social service worker? And while you are building up this environmental background, can you enter into the same personal relationship that you ought to have in private practice? If you can do all this, and I know from experience that you can, then the study of medicine in the hospital actually becomes the practice of medicine, and the treatment of disease immediately takes its proper place in the larger problem of the care of the patient.

When a patient goes to a physician he usually has confidence that the physician is the best, or at least the best available, person to help him in what is, for the time being, his most important trouble. He relies on him as on a sympathetic adviser and a wise professional counselor. When a patient goes to a hospital he has confidence in the reputation of the institution, but it is hardly necessary to add that he also hopes to come into contact with some individual who personifies the institution and will also take a human interest in him. It is obvious that the first physician to see the patient is in this strategic position—and in hospitals all students can have the satisfaction of being regarded as physicians.

Here, for instance, is a poor fellow who has just been jolted to the hospital in an ambulance. A string of questions about himself and his family has been fired at him, his valuables and even his clothes have been taken away from him, and he is wheeled into the ward on a truck, miserable, scared, defenseless and, in his nakedness, unable to run away. He is lifted into a bed, becomes conscious of the fact that he is the center of interest in the ward, wishes that he had stayed at home among friends, and, just as he is beginning to take stock of his surroundings, finds that a thermometer is being stuck under his tongue. It is all strange and new, and he wonders what is going to happen next. The next thing that does happen is that a man in a long white coat sits down by his bedside, and starts to talk to him. Now it happens that, according to our system of clinical instruction, that man is usually a medical student. Do you see what an opportunity you have? The foundation of your whole relation with that patient is laid in those first few minutes of contact, just as happens in private practice. Here is a worried, lonely, suffering man, and if you begin by approaching him with sympathy, tact, and consideration, you get his confidence and he becomes your patient. Interns and visiting physicians may come and go, and the hierarchy gives them a precedence; but if you make the most of your opportunities he will regard you as his personal physician, and all the rest as mere consultants.

Of course, you must not drop him after you have taken the history and made your physical examination. Once your relationship with him has been established, you must foster it by every means. Watch his condition closely and he will see that you are alert professionally. Make time to have little talks with him—and these talks need not always be about his symptoms. Remember that you want to know him as a man, and this means you must know about his family and friends, his work and his play. What kind of person is he—cheerful, depressed, introspective, careless, conscientious, mentally keen or dull? Look out for all the little incidental things that you can do for his comfort. These, too, are a part of "the care of the patient." Some of them will fall technically in the field of "nursing," but you will always be profoundly grateful for any nursing technique that you have acquired. It is worth your while to get the nurse to teach you the right way to feed a patient, change the bed, or give a bed pan. Do you know the practical tricks that make a dyspneic patient comfortable? Assume some responsibility for these apparently minor points and you will find that it is when you are doing such friendly service, rather than when you are a formal questioner, that the patient suddenly starts to unburden himself, and a flood of light is thrown on the situation.

What Textbooks Can't Tell

Meanwhile, of course, you will have been active along strictly medical lines, and by the time your clinical and laboratory examinations are completed you will be surprised to see how intimately you know your patient, not only as an interesting case but also as a sick human being. And everything you have picked up about him will be of value in the subsequent handling of the situation. Suppose, for instance, you find conclusive evidence that his symptoms are due to organic disease; say, to a gastric ulcer. As soon as you face the problem of laying out his regimen, you find that it is one thing to write an examination paper on the treatment of gastric ulcer and quite another thing to treat John Smith, who happens to have a gastric ulcer. You want to begin by giving him rest in bed and a special diet for eight weeks. Rest means both nervous and physical rest. Can he get it best at home or in the hospital? What are the conditions at home? If you keep him in the hospital, it is probably good for him to see certain people, and bad for him to see others. He has business problems that must be considered. What kind of a compromise can you make on them? How about the financial implications of eight weeks in bed followed by a period of convalescence? Is it, on the whole, wiser to try a strict regime for a shorter period, and, if he does not improve, take up the question of operation sooner than is in general advisable? These and many similar problems arise in the course of the treatment of almost every patient, and they have to be looked at, not from the abstract point of view of the treatment of the disease, but from the concrete point of view of the care of the individual.

Suppose, on the other hand, that all your clinical and laboratory examinations turn out entirely negative as far as revealing any evidence of organic disease is concerned. Then you are in the difficult position of not having discovered the explanation of the patient's symptoms. You have merely assured yourself that certain conditions are not present. Of course, the first thing you have to consider is whether these symptoms are the result of organic disease in such an early stage that you cannot definitely recognize it. This problem is often extremely perplexing, requiring great clinical experience for its solution, and often you will be forced to fall back on time in which to watch developments. If however, you finally exclude recognizable organic disease, and the probability of early or very slight organic disease, it becomes necessary to consider whether the symptomatology may be due to a functional disorder which is caused by nervous or emotional influences. You know a good deal about the personal life of your patient by this time, but perhaps there is nothing that stands out as an obvious etiologic factor, and it becomes necessary to sit down for a long, intimate talk to discover what has remained hidden.

Explain it to the Patient

Sometimes it is well to explain to the patient, by obvious examples, how it is that emotional states may bring about symptoms similar to his own, so that he will understand what you are driving at and will cooperate with you. Often the best way is to go back to the very beginning and try to find out the circumstances of the patient's life at the time the symptoms first began. The association between symptoms and cause may have been simpler and more direct at its onset, at least in the patient's mind, for as time goes on, and the symptoms become more pronounced and distressing, there is a natural tendency for the symptoms to occupy so much of the foreground of the picture that the background is completely obliterated. Sorrow, disappointment, anxiety, self-distrust, thwarted ideals or ambitions in social, business or personal life, and particularly what are called maladaptations to these conditions—these are among the commonest and simplest factors that initiate and perpetuate the functional disturbances. Perhaps you will find that the digestive disturbances began at the time the patient was in serious financial difficulties, and that they recurred whenever he is worried about money matters. Or you may find that ten years ago a physician told the patient he had heart disease, cautioning him "not to worry about it." For ten years the patient has never mentioned the subject, but he has avoided every exertion, and has lived with the idea that sudden death was in store for him. You will find that physicians, by wrong diagnoses and ill-considered statements, are responsible for many a wrecked life, and you will discover that it is much easier to make a wrong diagnosis than it is to unmake it. Or, again, you may find that the pain in this woman's back made its appearance when she first felt her domestic unhappiness, and that this man's headaches have been associated, not with long hours of work, but with a constant depression due to unfulfilled ambitions. The causes are manifold and the manifestations protean.

Sometimes the mechanism of cause and effect is obvious; sometimes it becomes apparent only after a very tangled skein has been unraveled.

If the establishment of an intimate personal relationship is necessary in the diagnosis of functional disturbances, it becomes doubly necessary in their treatment. Unless there is complete confidence in the sympathetic understanding of the physician as well as in his professional skill, very little can be accomplished; but granted that you have been able to get close enough to the patient to discover the cause of the trouble, you will find that a general hospital is not at all an impossible place for the treatment of functional disturbances. The hospital has, indeed, the advantage that the entire reputation of the institution, and all that it represents in the way of facilities for diagnosis and treatment, go to enhance the confidence which the patient has in the individual physician who represents it. This gives the very young physician a hold on his patients that he could scarcely hope to have without its support.

Another advantage is that hospital patients are removed from their usual environment, for the treatment of functional disturbances is often easier when patients are away from friends, relatives, home, work and, indeed, everything that is associated with their daily life. It is true that in a public ward one cannot obtain complete isolation in the sense that this is a part of the Weir Mitchell treatment, but the main object is accomplished if one has obtained the psychologic effect of isolation which comes with an entirely new and unaccustomed atmosphere. The conditions, therefore, under which you, as students, come into contact with patients with functional disturbances are not wholly unfavorable, and with very little effort they can be made to simulate closely the conditions in private practice.

It is not my purpose, however, to go into a discussion of the methods of treating functional disturbances, and I have dwelt on the subject only because these cases illustrate so clearly the vital importance of the personal relationship between physician and patient in the practice of medicine. In all your patients whose symptoms are of functional origin, the whole problem of diagnosis and treatment depends on your insight into the patient's character and personal life, and in every case of organic disease there are complex interactions between the pathologic processes and the intellectual processes which you must appreciate and consider if you would be a wise clinician.

There are moments, of course, in cases of serious illness when you will think solely of the disease and its treatment; but when the corner is turned and the immediate crisis is passed, you must give your attention to the patient. Disease in man is never exactly the same as disease in an experimental animal, for in man the disease at once affects and is affected by what we call the emotional life. Thus, the physician who attempts to take care of a patient while he neglects this factor is as unscientific as the investigator who neglects to control all the conditions that may affect his experiment. The good physician knows his patients through and through, and his knowledge is bought dearly. Time, sympathy, and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient.

REFERENCES

1. Perhaps, in the light of current knowledge, Dr. Peabody might rephrase this statement were he writing this speech today.

Mononucleosis—Diagnostic Tests

A four-year study of a class of West Point cadets before, during, and after development of clinical and subclinical infectious mononucleosis has permitted critical evaluation of four tests used for diagnosis and research on this disease. This study, conducted by scientists from the WHO Serum Reference Bank of Yale University School of Medicine's Department of Epidemiology and Public Health, was partly supported by the National Institute of Allergy and Infectious Diseases and National Cancer Institute grants.

Infectious mononucleosis is characterized by intense formation of several types of antibody developing at different stages of the infection and persisting for times varying from weeks to years. Antibody detection, necessary to diagnose and study the disease, requires blood sample collection over an extended period and the use of the test best suited for each evaluation. In underdeveloped countries in the tropics, most children develop EBV antibodies before the age of 10, and clinical symptoms of infectious mononucleosis are almost unknown. Where socioeconomic conditions are higher, infection is often delayed, and symptoms, when they appear, are more severe. The prime susceptible population for the disease in the United States is the 15-25 year age group, the victims often being college students.

Three heterophile antibody tests—the beef hemolysin test, the horse red blood cell test, and the sheep red blood cell test—plus a test specific for IgM antibody to the Epstein-Barr virus (EBV) (a herpes-like virus believed to be the cause of infectious mononucleosis) were evaluated for specificity, sensitivity, and persistence of the antibody.

Of the 1,401 cadets who entered West Point in 1969 and left in 1973, 964 arrived with EBV antibody, indicating prior clinical or subclinical infection. Of the 437 who had no EBV antibody, 53 subsequently developed the disease and another 129 developed EBV antibody without recognized mononucleosis.

Specificity, indicated by absence of EBV antibody before illness, was greatest with the beef hemolysin test. The EBV-specific IgM antibody test ranked next, the horse red blood cell test third, and the sheep red cell test a poor fourth.

In sensitivity and persistence studies of fully confirmed mononucleosis, the horse red blood cell test yielded 96 percent positive results, attained the highest geometric mean titer (1:1,906), and the antibody persisted for at least a year in 75 percent of the tested sera. The EBV-specific IgM antibody test was also highly sensitive, with 96.7 percent positive results, but titers were lower (1:14), the antibody disappeared rapidly, and the test is very difficult to perform. The beef hemolysin test yielded only 85 percent positive results, the titer was 1:152, and antibody persisted about three months, but this test, under slightly different standards would probably show better results, the scientists said.

The sheep red blood cell test performed least satisfactorily, with only 80 percent diagnostic titers, a mean titer of 1:224, and very short persistence. The scientists recommended its replacement by the horse red blood cell test for sensitivity and persistence, and the beef hemolysin test for specificity.

Drs. Alfred S. Evans, James C. Niederman, Linda C. Cenabre, Bernice West, and Virginia A. Richards reported their findings in the November 1975 *Journal of Infectious Diseases.*

Mortality by Socioeconomic Levels

Thomas E. Steahr, Ph.D.

Cause of Death and Socioeconomic Level of Towns in Connecticut

There has been a continuing interest in exploring the relationship between measures of socioeconomic levels and mortality rates in Connecticut. In an early report, Edward G. Stockwell presented evidence of the existence of a pronounced inverse relationship between levels of mortality and levels of socioeconomic status for the white population of the city of Hartford during the period 1949-51 ("Socioeconomic Status and Mortality," *Connecticut Health Bulletin,* 77:10, Oct. 1963). This relationship was found to hold for total whites, for males and females, and for both infectious and degenerative causes of death. His analysis was based on grouping Hartford census tracts into five social rank categories on the basis of occupation, education, and income composition of the population.

In an attempt to refine these early findings, Stockwell examined the relationship between infant mortality and socioeconomic status of census tracts in Hartford during the period 1949-51 ("Infant Mortality and Socioeconomic Status," *Connecticut Health Bulletin,* 79:11, Nov. 1965). Instead of the expected inverse gradient, the relationship between socioeconomic status and infant mortality tended to be more direct: the highest infant mortality rate was found in the highest social rank area, whereas the lowest infant mortality rates were found at the intermediate status levels. This direct association was also discovered for neonatal mortality (deaths under one month) but not present for postneonatal mortality (deaths one month to one year). The explanation was that most infant deaths are neonatal deaths which are associated with biological causes rather than socioeconomic factors. On the other hand, postneonatal deaths are further removed from the physiological processes of gestation and birth and therefore reflect the adverse influence of a low socioeconomic status.

A more recent study expanded the analysis to include seven cities in Connecticut and examined variation in the incidence of cervical cancer in towns of the socioeconomic levels of census tracts for the period 1959-64 (Christine, B.W.; W.H. Groff; T.H. Pitt; and M.F. Chapple, "The Relationship of Incidence of Cervical Cancer and Socioeconomic Status in Seven Cities, 1959-1964," *Connecticut Medicine,* Vol. 36, No. 2, Feb. 1972). The results indicate that the classical inverse relationship was evident for the seven cities combined, e.g., the rate of cancer of the cervix was greater in low socioeconomic areas. However, the inverse relationship was not constant when the cities were studied separately.

This previous research has thrown light on the complex relationship between socioeconomic status and mortality but has been limited to the study of a few cities in Connecticut and to selected mortality rates. The purpose of this report is to expand this analysis to include all 169 towns in Connecticut and to include mortality rates by major causes of death.

Methods and Data

Following the traditional technique of calculating socioeconomic scores for geographic areas, three indicators of occupation, education, and income levels for each town in Connecticut were transformed into standardized scores and then combined into a single socioeconomic index score. Each town was then placed into one of five categories that ranked the scores from high, Category I, to low, Category V. The data were taken from the 1970 Census of Population. A more complete description of the methodology involved is given by W.H. Groff and J.N. Wright (*Socioeconomic Index Scores for Connecticut Towns, 1970,* SAES Bulletin 442, University of Connecticut, Jan. 1976).

After the socioeconomic level of each town had been determined, age standardized cause specific mortality rates were calculated by the method of indirect standardization. For each town with 10,000 population or more reporting deaths to residents in 1970 for each specific cause, an age standardized death rate was determined using the 1970 age structure of Connecticut as the standard. The result was a set of cause specific mortality rates for towns that control for the effects of town differences in age structures. Also included in the analysis was the age standardized crude death rate for all causes combined for each town. All mortality data were taken from the official state vital statistics reports (State of Connecticut, *123rd Registration Report, 1970,* State Department of Health, Hartford.

Towns were then classified into the appropriate socioeconomic category and the geometric mean of the age-standardized cause specific mortality rates was calculated for the towns within each socioeconomic level. This procedure will allow the relationship

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DR. THOMAS E. STEAHR, Associate Professor, Department of Agricultural Economics and Rural Sociology, University of Connecticut.

between socioeconomic level of towns and the mortality rate to be examined.

Results

Table 1 presents the standardized rates by cause of death for towns classified by socioeconomic levels in 1970. It is immediately apparent that the crude death rate from all causes follows the classic inverse relationship between the magnitude of the rate and the socioeconomic level of towns. Unlike the cause specific death rates, the crude death rate was determined for all 169 towns regardless of population size and includes deaths from causes not contained in the cause specific classification, i.e., deaths from "other causes." On the basis of the age-standardized crude death rate, one would conclude that decreases in the socioeconomic levels of towns is associated with increases in the crude death rate.

A different pattern emerges when cause specific standardized death rates are examined. Death rates from cardiovascular disease, including heart disease and cerebrovascular disease, are higher for towns classified in the highest socioeconomic level compared to towns in the second highest socioeconomic level. For towns classified in socioeconomic levels II through V there is the inverse relationship found for the crude death rate. The arteriosclerosis death rate does not have a systematic relationship to socioeconomic level of towns.

Age standardized death rates from malignant neoplasms, all accidents, diabetes mellitus, and emphysema do not appear to have a systematic relationship with the socioeconomic level of towns. These rates vary for towns in socioeconomic levels II through IV, without any clear consistent pattern. However, the death rates for these causes, with the exception of emphysema, are lower for level I towns in comparison to level V towns but the patterns for intermediate levels are mixed.

The age standardized death rates for pneumonia has a weak inverse relationship with socioeconomic level of towns. Standardized death rates for cirrhosis of the liver follows the pattern described for cardiovascular disease i.e., in inverse pattern exists for towns classified in socioeconomic levels II through V but not including the highest level I.

Conclusion

The impact of socioeconomic levels of towns on mortality in Connecticut is a complicated one. Standardized crude death rates show the anticipated inverse relationship with socioeconomic level of towns but the pattern is not as consistent when specific cause of death is examined. This is probably due to the fact that all 169 towns were included in the crude death rate whereas each cause specific death rate was based only on towns of 10,000 population or more reporting deaths from that cause.

The unanticipated pattern found for the standardized cardiovascular disease death rate (based on 76 towns) may be due to several factors: a) the existence

Table 1

AGE STANDARDIZED DEATH RATES BY SELECTED CAUSE OF DEATH FOR CONNECTICUT TOWNS CLASSIFIED BY SOCIOECONOMIC LEVELS, 1970.

	Socioeconomic Level					
Cause of Death	*(High) I*	*II*	*III*	*IV*	*(Low) V*	*State Rate*
All Causes	73.6	77.8	80.2	83.9	90.7	80.2
Selected Causes:*						
Cardiovascular Disease (390-448)	42.0	40.5	44.9	47.5	48.9	44.2
Heart Disease (390-398, 402, 404, 410-414, 420-429)	30.7	28.8	33.0	33.8	34.6	31.9
Ischemic (410-414)	29.1	26.9	31.4	31.8	32.2	30.1
Rheumatic (390-398)	.7	.9	.7	1.0	.8	.8
Cerebrovascular (430-438)	8.6	7.9	8.7	10.1	10.0	8.8
Arteriosclerosis (440)	1.4	1.7	1.3	1.2	1.8	1.4
Malignant Neoplasms (140-209)	14.6	17.1	16.2	16.0	18.0	16.4
All Accidents (E800-E949)	2.4	3.3	3.3	2.2	3.2	3.0
Pneumonia (480-486)	1.6	2.5	2.5	2.8	2.8	2.4
Cirrhosis of Liver (571)	1.6	1.1	1.7	2.1	2.5	1.7
Diabetes-Mellitus (250)	1.3	1.3	1.6	1.8	1.7	1.5
Emphysema (492)	.9	1.1	1.0	1.0	.8	1.0

Note: Rates are per 10,000 population by cause of death. For each socioeconomic level and each cause of death, the table presents the geometric mean of rates for towns of 10,000 or more population reporting deaths from that cause. The numbers in parentheses refer to the International List Numbers taken from the *International Classification of Diseases*, Vol. 1, World Health Organization, Eighth Revision, 1967.

*Omitted from this table are deaths classified in the residual category of "other causes."

of conditions in towns in the highest socioeconomic level that actually increase the mortality rate from this cause in comparison to towns in the second level, b) the distinction between socioeconomic levels I and II is not great and the two categories should be combined into one, and c) the 1970 time period for this study did not provide a stable measure of the relationship between mortality and socioeconomic level.

The second hypothesis is probably the most likely and had levels I and II been combined, death rates from cardiovascular disease (heart disease and cerebrovascular disease), and cirrhosis of the liver would have followed the inverse pattern of the crude death rate. However, this would not have changed the pattern observed for the arteriosclerosis death rate, malignant neoplasms death rate, all accidents death rate, pneumonia death rate, diabetes mellitus death rate, and the emphysema death rate. The socioeconomic level of towns is not associated with standardized death rates from those causes.

One implication of this research is that the adverse effects of low socioeconomic status is most pronounced for selected causes of death, particularly cardiovascular disease. Since deaths from this cause accounted for 53.4 percent of all deaths in 1970, a more detailed analysis of those towns with low socioeconomic levels is necessary if an effective health program for Connecticut is to be developed.

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National Health Planning and Resources Development Act—PL 93-641

In the closing hours of the 93rd Congress, the House of Representatives and the Senate adopted Conference Report S 2994, the National Health Planning and Resources Development Act. On January 4, 1975, President Ford signed the measure into law despite strong opposition from the American Medical Association, National Association of Counties, National Governors Conference, Office of Management and Budget, and the California Hospital Association. Within days of enactment the Association announced its intent to go to court in an attempt to have the new planning law declared unconstitutional, as an unwarranted assumption of state authority by the federal government. This informational report reviews PL 93-641 and presents a summary of Association and HEW activities regarding implementation.

PL 93-641 establishes a new planning and regulatory authority which replaces the Comprehensive Health Planning Programs, Regional Medical Programs, and Experimental Health Services Delivery Systems, and significantly modifies the Hill-Burton facilities construction program.

The Act adds two new titles to the Public Health Service Act—Title XV, National Health Planning and Development, and Title XVI, Health Resources Development. Title XV establishes a planning and regulatory network composed of the Secretary of Health, Education, and Welfare; a National Council on Health Planning and Development; State Health Planning and Development Agencies; Statewide Health Coordinating Councils; and Health Systems Agencies. The purpose of this multi-layered structure is to facilitate the development of national health planning policy; augment planning for health services, manpower, and facilities; and develop resources to insure equal access to quality health care at a reasonable cost.

To accommodate this planning and regulatory network more than 200 Health Service Areas have been established throughout the nation. Health Service Areas were recommended by governors and designated by the Secretary, provided they met the following requirements of the statute:

1 - Be a geographic region appropriate for the effective planning and development of health services.

2 - Have available health resources to provide for all necessary health services for its residents.

3 - Include "to the extent practical" at least one center for the provision of highly specialized health services.

4 - Have a population of not less than 500,000 or more than 3 million. Exemption by waiver was granted by the Secretary for a population of less than 500,000 under "unusual" circumstances, and less than 200,000 under "highly unusual" circumstances.

5 - Be coordinated, "to the maximum extent feasible," with the Professional Standards Review Organization, regional planning and state planning administrative areas.

6 - Consideration was also to be given to:
  (a) any economic or geographic barriers to the receipt of health planning and development services in non-metropolitan areas;
  (b) recognition of the differences in health planning and health resources development need between non-metropolitan and metropolitan areas; and
  (c) the requirement that each standard metropolitan statistical area must be entirely within the boundaries of one Health Service Area, unless excepted by the governor and granted by the Secretary.

The governors were permitted to identify current Comprehensive Health Planning 314(b) areas as Health Service Areas, provided that these areas met all of the above requirements. The governors were further required to solicit the views of the existing State CHP Agency, each local areawide 314(b) agency, Regional Medical Program, and the chief executive officer of each state political subdivision.

TITLE XV

The following is a description of the five administrative structures and their respective roles under Title XV:

1 - *Secretary of HEW*

Within eighteen months of enactment the Secretary is required to issue, through regulations, guidelines on national health planning policy, which may be revised as he deems appropriate. These guidelines are to include standards for the "appropriate supply, distribution, and organization of health resources," and a statement of national health planning goals expressed in quantitative terms. Congress identified ten national health priorities which the Secretary must take into consideration prior to issuing national health planning goals. These priorities include development of multi-institutional systems for coordination or consolidation of institutional health services; provision of primary care especially to rural and economically depressed areas; development of medical group practices; utilization of physician assistants; development of multi-institutional arrangements for sharing of support services; promotion of facilities to achieve needed improvements in the quality of health services; development by institutions to provide various levels of care on a geographic basis; preventive health care services; uniform cost accounting, and development of methods for educating the general public concerning proper personal health care.

The statute further mandates the Secretary to:

—Establish a National Council on Health Planning and Development.

—Review and approve or disapprove the annual budgets of each Health Systems Agency (HSA) and State Health Planning and Development Agency, develop performance standards for the agencies, and monitor their performance in accordance with these standards.

—Review the structure, operation and performance of each Health Systems Agency and State Agency at least every three years.

—Provide technical assistance to HSAs and State Agencies.

—Establish procedures and criteria to be used by the HSAs and State Agencies in performing reviews of State Medical Facilities Plans, appropriateness of

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Report of the AMA Board of Trustees, House of Delegates.

existing institutional health services, proposed new institutional health services, certain federal grant funds, Health Systems Plans, Annual Implementation Plans, and State Health Plans.

—Establish a National Health Planning Information Center and at least five centers for the study and development of health planning.

—Make grants for the purpose of demonstrating the effectiveness of rate regulation to not more than six states which are currently regulating, or have indicated their intent to regulate rates prior to June 1976.

2 - *National Council on Health Planning and Development*

The Council is to advise the Secretary of HEW on the development of national guidelines; implementation and administration of the new law; and implications of new medical technology for organizing, delivering and distributing health care services. Twelve of the fifteen-member Council will be appointed by the Secretary, with the remaining three members serving in an ex-officio capacity. The ex-officio members must include the Chief Medical Director of the Veterans Administration, Assistant Secretary for Health and Environment of the Defense Department, and the Assistant Secretary for Health of HEW. In selecting the other members the Secretary cannot appoint less than five consumers, not more than three federal employees, not less than three representatives from Health Systems Agencies and State Health Coordinating Councils. Members of the Council are to be equally divided between the two major political parties, and will serve staggered terms of six years.

3 - *State Health Planning and Development Agencies (SHPDA)*

The State Agency is to be selected by the governor of each state and approved by the Secretary of HEW. The Secretary is empowered to enter into contracts with a State Agency under which the agency will perform the following functions:

—Conduct health planning activities for the state and implement state plan and local Health Systems Plans.

—Prepare annually a State Health Plan made up from Health Systems Plans.

—Assist Statewide Health Coordinating Council in the review of State Medical Facilities Plan.

—Serve as the designated planning agency for Section 1122 (Medicare limit on capital expenditures).

—Administer the state Certificate of Need Program (all states are to have this).

—Review all institutional health services regarding appropriateness of such services, and make findings public.

—Review HSA recommendations for new institutional health services and make findings as to needs.

The State Agency must perform these functions to the satisfaction of the Secretary, as well as meet certain criteria relating to professional staff qualifications, administrative methodology, and performance and project review standards which are to be promulgated through regulation. The State Agency must renew its contract with the Secretary on an annual basis and is to receive planning grants in amounts determined by the Secretary; however, grants cannot exceed 75% of operation costs. Twenty-five and thirty million dollars respectively were appropriated for 1975 and 1976.

4. *Statewide Health Coordinating Council (SHCC)*

The Statewide Council will be advisory to the State Agency in health planning activities for the state; however, it does have specific authority with regard to review and revision (if deemed appropriate by the Council) of the State Health Plan and the State Medical Facilities Plan. These plans are to be integrated with local planning efforts of the HSAs, thus in effect giving the State Council some authority over local planning. Additionally, the Council will review the HSA budgets and provide comment to the Secretary, as well as review federal grant requests by both the State and Health Systems Agencies.

A Council will have at least 16 members appointed by the governor from nominees submitted by local Health Systems Agencies. In addition, the governor can appoint other individuals he deems appropriate, but not more than 40% of the Council. A majority of the governor's appointees must be consumers, and at least one-third must be direct providers.

5. *Health Systems Agencies (HSA)*

For each Health Service Area a Health Systems Agency will be established by the Secretary after consultation with the appropriate governor. The Health Systems Agency may be a private non-profit corporation, public regional planning body, or general local government provided that its jurisdictional authority is identical to the Health Service Area. The agency cannot be or operate an educational institution and if it is a public body it must have an independent governing board.

The agency board must have at least ten members, and cannot exceed thirty members unless an executive committee is established by the board. The executive committee is limited to twenty-five members and is granted full authority over the planning and development functions of the agency. A majority of the agency board and executive committee must be consumers (but not more than 60%), with not less than one-third of the board to be direct providers. Recently through proposed regulations the Secretary has added a requirement that not more than one-third of the board can be public officials.

The agency staff are required to have the expertise in administration, data accumulation and analysis, health planning, development and use of health resources. The agency is required to have not less than five staff or, if more, one staff per 100,000 population to a maximum of twenty-five.

The law requires the Health Systems Agencies to perform the following functions:

—Assemble and analyze data concerning: health status of the people; status and use of health care delivery system; effect that health care resources have on health of residents; number, type and location of health care resources; patterns of utilization of health care; and environmental and occupational exposure factors affecting health.

—Develop and annually review a Health Systems Plan (HSP) which shall contain a detailed statement of goals concerning; a healthful environment and health systems in the area; responsiveness to the unique needs and resources of the area; consistency with the national guidelines for health planning policy. Public hearings on the Health Systems Plan must be held following at least a 30-day public notice.

- —Develop and annually review an Annual Implementation Plan which describes objectives to achieve the goals of the Health Systems Plan and priorities among those objectives.
- —Develop and publish strategies and projects for achieving the objectives in the Annual Implementation Plan.
- —Provide technical assistance to individuals and public and private entities for the development of projects and programs consistent with the Annual Implementation Plan.
- —Make grants and contracts with public and non-profit private entities for projects and programs consistent with the Annual Implementation Plan.
- —Coordinate its activities with PSROs and other appropriate general or special purpose regional planning administrative agencies.
- —Review and approve or disapprove each proposed use of funds under the Public Health Service Act (with certain exceptions), the Community Mental Health Centers Act, and the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970.
- —Make recommendations to State Health Planning and Development Agency, respecting need for new institutional health services proposed for the Health Service Area.
- —Review on a periodic basis (at least every 5 years) all institutional health services, and make recommendations to State Health Planning and Development Agency (SHPDA) respecting appropriateness of such services (the HSA has three years to complete its review of such services).
- —Annually recommended to SHPDA projects for the modernization, construction and conversion of medical facilities in the area and set priorities among such projects.

Sub-area Councils are to be established by Health Systems Agencies to advise the governing body of the Agency on the performance of its functions.

Health Systems Agencies will receive planning grants under a formula specified by the Secretary providing up to 50 cents per capita in the Health Service Area, but not in excess of $3,750,000 nor less than $175,000. There is a provision for an additional 25 cents per capita if local matching funds are provided. Sixty million and ninety million dollars respectively were appropriated for 1975 and 1976 for these grants.

TITLE XVI

Title XVI, Health Resources Development, replaces the present Hill-Burton construction program. The law's purpose is to modernize medical facilities; to construct new outpatient medical facilities; to construct new inpatient medical facilities in areas which have experienced recent rapid population growth; and to convert existing medical facilities for the provision of new health services.

In determining priorities among projects within a state, emphasis must be placed on rural and urban poverty areas, facility modernization in densely populated areas, facilities that provide comprehensive care including out-patient and preventive care, and projects to eliminate or prevent safety hazards in compliance with state licensure and accreditation standards. Prior to approval for any projects, the state must have submitted to the Secretary a State Medical Facilities Plan which has been approved by the Statewide Council and is consistent with the State Health Plan.

The State Medical Facilities Plan must specify the projects for federal assistance and the priorities for funding; and survey need and resource distribution (including inpatient and outpatient facilities, beds), and need of modernization or conversion.

Federal funds may cover up to two-thirds of project costs and 100% of cost in rural or urban poverty areas. Funding would be available either directly to the state, which would determine and fund construction and modernization projects; or through loan guarantees allocated on the basis of population, financial need, and the need for specific projects. Grant amounts may be withheld by the Secretary if a state fails to comply with program criteria. Not more than 20% annually of the funds may be obligated for new facilities for inpatient treatment in areas of the state experiencing rapid population growth, and not less than 25% annually may be obligated for outpatient facilities serving medically underserved populations.

The Act establishes Area Health Services Development Funds, to be administered by the Health Systems Agencies, to contract with entities to plan and develop projects which the agency deems necessary for achievement of its health plan. Development funds cannot exceed one dollar per capita of the Health Service Area's population. Twenty-five and seventy-five million dollars were appropriated for 1975 and 1976. The 1975 and 1976 appropriations for health facility construction and modernization are $125 million and $130 million respectively. No state is to receive less than one million dollars.

STATUS OF HEW ACTIVITIES

Federal staff previously assigned to Comprehensive Health Planning, Regional Medical Programs, and Hill-Burton construction programs have been re-organized and assigned to the new Bureau of Health Planning and Resources Development in the Health Resources Administration of DHEW. A committee composed of DHEW staff has been established to oversee program development and implementation. The committee is chaired jointly by the Assistant Secretaries for Health and for Planning and Development.

AMA ACTIVITIES

The Association strongly opposed the various health planning proposals in both the House of Representatives and the Senate. The AMA along with several provider groups was able to persuade Congress to drop more extensive aspects, including public utility regulation on institutional and other providers of service, prior to passage. The Board of Trustees urged President Ford to veto the measure and extend existing planning authorities until an appropriate alternative was developed. The Board also directed the General Counsel to examine constitutional issues raised with the enactment of PL 93-641, with a view toward litigation. The following summarize several reasons for AMA opposition to PL 93-641:

- —Rate review demonstration programs in six states, which permit rate setting and/or regulation of health care provider reimbursement. This may lead to a dangerous and unwise precedent, resulting in unequal and arbitrary treatment of patients and providers.
- —Federal control of the health care sector through broad authority vested in the Secretary of HEW.
- —A multi-layered structure of planning and regulatory

authorities along with complex administrative procedures, which tend to negate rather than support the processes of planning.

—The requirement that all states have Certificate of Need legislation that adheres to criteria established by the Secretary of HEW.

—Foci of control over the planning and regulatory process is removed from the local level.

At the 1975 Annual Convention the House of Delegates supported "any action, including legal action," deemed appropriate in preventing implementation of the National Health Planning and Resources Development Act. Legal action is under advisement and there appear to be sufficient grounds on which to challenge the constitutionality of the law at the appropriate time.

It should be clearly noted from the foregoing that the Board of Trustees views Public Law 93-641 as imminently dangerous to the provision of quality medical care. The Association testified strongly in opposition to the legislation when it was before the Congress, and, after its passage by the House and Senate, urged the President to veto the measure.

In a May 9, 1974, statement to a committee of the House of Representatives, Drs. Russell B. Roth and Richard E. Palmer, speaking for the American Medical Association, said: "Solutions to the problems relating to health planning and resource development should not be sought in the initiation of highly structured, federally dominated programs, laminating upon all the providers of health care layers of planning agencies and layers of regulatory directives." And at another point in their testimony, the AMA witnesses said, "The contemplated formal system of planning coupled with the public utility regulations is not wise and cannot be justified."

It is the Board's view that nothing has occurred thus far which warrants any alteration of the foregoing opinion. Accordingly, as indicated, the Board of Trustees intends to pursue legal action.

Until such time as legal action is feasible, the Association will follow a course of activity designed to protect the interests of the public and assist the federation in carrying out its responsibilities. Such assistance will include: review and comment on published or promulgated regulations; participation in conferences and meetings, sponsored by others, to express AMA viewpoints; expansion of AMA Speakers' Bureau subject matter to include addressing this law and its implications; convening of conferences and meetings to publicize AMA's concerns and provide a forum for discussion within the profession; provision of information and assistance in response to specific requests from the Federation; at the request of medical societies, cooperate, where desirable, with Health Service agencies with respect to informational needs; and the assignment of substantial space in AMA publications to the coverage of developments in the law.

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Continuing Medical Education Fact Sheet

1. State medical Associations who have made a policy decision to require continuing medical education (CME) as a condition of membership, but not all of whom had been able to implement this decision as of April 30, 1976:

Alabama
Arizona
Florida
Kansas
Maine
Massachusetts
Minnesota
Montana
New Jersey
New York
North Carolina
Oregon
Pennsylvania
Vermont

2. Medical specialty societies who have made a policy decision to require CME as a condition of membership, but not all of whom have been able to implement this decision as of the above data:

American Academy of Family Physicians
American College of Emergency Physicians
American College of Radiology
American Psychiatric Association
American Society of Abdominal Surgeons
American Society of Plastic & Reconstructive Surgeons, Inc.

3. All 22 medical specialty boards have established a policy to provide recertification, 10 of these have established dates on which recertification will begin.

American Board of Colon & Rectal Surgery	1985+
American Board of Family Practice	10/30-31/76+
American Board of Internal Medicine	10/26/74
American Board of Ob-Gyn	1977
American Board of Otolaryngology	1978
American Board of Physician Medicine & Rehabilitation	1977
American Board of Plastic Surgery	1978
American Board of Radiology	1978
American Board of Surgery	1985+
American Board of Thoracic Surgery	1986+

4. Medical practice acts in fourteen states give the State Board of Medical Examiners authority to require evidence of CME as a condition for re-registration of the license to practice medicine. They are:

Arizona+
California+
Illinois+
Kansas
Kentucky
Maryland+
Michigan+
Minnesota
Nebraska
New Mexico+
Ohio+
Utah
Washington+
*Wisconsin

The Board of Medical Examiners in Maryland and New Mexico have implemented their program and accept the PRA as meeting their requirements. The law in Ohio states, "Every doctor of medicine licensed to practice medicine or surgery within this state shall, on or before the first day of January of EVERY THIRD YEAR AFTER THE 1977 REGISTRATION, apply to the state medical board for a certificate of TRIENNIAL registration with the board upon an application which shall be furnished by the board. *THE APPLICANT SHALL INCLUDE SATISFACTORY EVIDENCE TO THE BOARD THAT IN THE PRECEDING THREE YEARS THE PRACTITIONERY HAD COMPLETED 150 HOURS OF CME CERTIFIED BY THE OHIO STATE MEDICAL ASSOCIATION AND APPROVED BY THE BOARD.*

*The state of Wisconsin has enacted malpractice legislation requiring 15 hours of annual CME credit for relicensure, starting in 1977, as a requirement for licensure.

5. The Physician's Recognition Award (PRA) provides a mean for documenting CME for all physicians in any field of medicine. Programs for certifying CME are in operation in the states of Arizona, California, Oregon and Pennsylvania. Criteria for certification adopted by the New Jersey Medical Society and the Pennsylvania Medical Society are identical to those of the PRA. The AMA assists the state associations of Arizona and Pennsylvania, the American Society of Clinical Pathologists and the College of American Pathologists in review and evaluation of the applications from their membership for their certificate in CME. The PRA program endorses the CME programs for the following organizations:

American Academy of Family Physicians
American College of Obstetricians and Gynecologists
American Society of Clinical Pathologists
College of American Pathologists
Arizona Medical Association, Inc.
California Medical Association
Oregon Medical Association
Pennsylvania Medical Society

This means that any physician qualifying for these programs is also considered qualified for the PRA. In the states of Pennsylvania and Arizona, the PRA certified is issued, as well as the state certificate, for CME. For the other organizations, a simple statement by the physician on his application for the PRA and the application fee is all that is needed. He need not complete the details of the application form.

6. *CRITERIA FOR THE PRA*	*Credit Hour Limit*
Category 1—CME Activities with Accredited Sponsorship (60 hours required)	No limit
Category 2—CME Activities with Non-accredited Sponsorship	45 hours
Category 3—Medical Teaching	45 hours
Category 4—Papers, Publications, Books and Exhibits	40 hours
Category 5—Non-supervised Individual CME Activities	45 hours
Category 6—Other Meritorious Learning Experiences	45 hours

A total of 150 credit hours are required over a 3-year period with a minimum of 60 credit hours required in Category 1.

7. State medical associations which have been approved by the Council on Medical Education of the American Medical Association for accreditation of organizations or institutions sponsoring intra-state continuing medical education programs are:

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    2. Pennsylvania Medical Society
    3. Tennessee Medical Association
    4. Medical & Chirurgical Faculty of Maryland
    5. New Mexico Medical Society
    6. West Virginia State Medical Association
    7. Medical Society of New Jersey
    8. Arizona Medical Association, Inc.
    9. Connecticut State Medical Society
    10. Illinois State Medical Society
    11. Indiana State Medical Association

12. Medical Association of Georgia
13. Medical Society of Dist. of Columbus
14. South Carolina Medical Association
15. Maine Medical Association
16. Kansas Medical Association
17. Mississippi State Medical Society
18. Medical Assn. of the State of Alabama
19. Louisiana State Medical Society
20. Massachusetts Medical Society
21. Rhode Island Medical Society
22. Utah State Medical Association
23. State Medical Society of Wisconsin
24. Florida Medical Association, Inc.
25. Idaho Medical Association
26. Hawaii Medical Association
27. Puerto Rico Medical Association
28. Virgin Islands Medical Society
29. Kentucky Medical Association
30. Minnesota State Medical Association
31. Ohio State Medical Association
32. Texas Medical Association
33. Medical Society of Virginia
34. Arkansas Medical Society
35. Medical Assn. of the Isthmian Canal Zone
36. Iowa Medical Society
37. Michigan State Medical Society
38. Missouri State Medical Association
39. New Hampshire Medical Society
40. Washington State Medical Association
41. Colorado Medical Society
42. Nebraska Medical Association
43. Medical Society of the State of New York
44. North Carolina Medical Society
45. North Dakota Medical Society
46. South Dakota State Medical Association
47. Vermont State Medical Society
48. Wyoming State Medical Society

8. Organizations which sponsor Self-Assessment Programs.

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American Academy of Dermatology
American Academy of Ophthalmology and Otolaryngology
American Academy of Orthopaedic Surgeons
American Academy of Pediatrics
American Association of Neurological Surgeons
American Board of Thoracic Surgery
American College of Cardiology
American College of Chest Physicians
American College of Emergency Physicians
American College of Obstetricians and Gynecologists
American College of Physicians
American College of Radiology
American College of Surgeons
American Neurological Association and
American Academy of Neurology
American Psychiatric Association
American Society of Anesthesiologists
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Month in Washington

Congress is expected shortly to pass legislation that it hopes will bring aid to a foundering Health Maintenance Organization (HMO) program.

The Senate has easily approved (80-8) a measure similar to one adopted by the House last fall authorizing $250 million over five years for HMOs and relaxing or removing many current federal restrictions.

The snail's pace growth of HMO, a specific type of prepaid group practice organization, since the original HMO bill was approved three years ago prompted the present Congress to liberalize the program in hopes the concept might move more quickly.

The most controversial feature of the measure in Senate debate was elimination of the open enrollment requirement for most HMOs. Chief Senate HMO champion, Sen. Edward Kennedy (D-Mass.), felt so strongly about this provision, also in the House bill, that he voted against the bill on the final tally.

Kennedy told the Senate that dropping open enrollment "represents a giant step backward in terms of public policy and has once again resulted in an abdication of the Congressional responsibility to extend the benefits of public programs to those least able to personally confront the members of Congress or their staffs in the same way that the commercial HMO and insurance organizations have been able to."

Proponents of the provision argued that it was needed in order to allow HMOs to be able to compete with other types of health insurance.

The American Medical Association, in testimony before House and Senate, asserted that the open enrollment requirement had been one of the prime justifications for enacting the HMO bill in the first place.

This provision, and some others, served to narrow the legislation to almost a simple subsidy of existing pre-paid group practice plans, the AMA testified.

When Kennedy and others talk about restructuring the present health system the main object they have in mind is making HMOs the dominant form of health care delivery with physicians as employees of the HMOs paid by salary rather than fee-for-service. Despite the importance of the bill, the debate was brief and desultory except for Kennedy's strong complaint about open enrollment.

In order to attract more physicians to HMOs, the bill would allow physicians to devote as little as 35 percent of their practice to HMOs and still be members of the HMO group. Current law requires more than 50 percent of professional time.

Under the Senate bill, community rating of charges for new HMOs would be delayed for three years compared with five years in the House bill. The Senate version provided that existing HMOs with more than 50,000 members would have to enroll at least four percent of new subscribers as open enrollees."

Some major required basic benefits were excluded, but the Senate retained alcohol and drug abuse treatment and home health services as basic benefits that must be offered. The House had shifted these to the optional, supplemental category.

The Senate bill did not touch on the dual option provision approved by the House, leaving the way clear for this to be enacted. The original HMO bill required employers to give their employees a choice between standard health insurance and a qualified HMO. The so-called "dual option" encountered trouble with labor laws covering collective bargaining rights. As a result, the House gave labor at collective bargaining the right to choose a standard health insurance plan as the exclusive plan for union members without a worker's option to select an HMO. But the bill does not permit the reverse, selection of an HMO by labor to the exclusion of a standard plan. Among other reasons for retaining the option in this case is the legal question involved in the federal subsidization of the HMO as opposed to the non-subsidized standard health insurance package.

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Former Georgia Gov. Jimmy Carter will send Congress a proposed national health insurance program right off the bat if he becomes President.

The apparent Democratic presidential nominee told reporters "I'm not going towait . . . on welfare reform, national health insurance, etc., I intend to be ready to go with that the first of the year."

In social programs, former President Lyndon Johnson "did an excellent job, but we still have a long way to go with national health care, reform of the welfare system, reform of the tax system," said Carter. "I don't make those commitments idly," he said. "This is something that should be done. I say that we need a national health insurance program—I mean to do it."

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The Democratic Platform Committee recommended a comprehensive national health insurance plank for the party's presidential convention in July. The recommended health plank endorsed no specific

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Prepared by the Washington, D.C.
Office of the American Medical Association

measure, a blow to labor's hopes for unqualified backing of the Kennedy-Corman NHI plan. A convention floor fight is unlikely.

The committee voted a statement on health that says NHI "should be financed by a combination of methods that will be adequate but not impose new or undue burdens. Consideration should be given to developing a means of support for NHI that taxes all forms of economic income."

The 153 member committee took a partisan slap at the Ford Administration declaring "an increasing Republican emphasis on restricting eligibility and services is emasculating basic medical care for older citizens who cannot meet the rising costs of good health."

Though calling for universal and mandatory coverage, the health plank said "national priorities of need and feasibility should determine the stages of the system's implementation. We must achieve all that is practical while we strive for what is ideal, taking intelligent steps to make adequate health services a right for all our people."

Maximum personal interrelationships between patients and their physicians should be preserved, the proposal said. "We should build on existing structures and experiment with new forms of medical care delivery to mold a national health policy that will meet our needs in a fiscally responsible manner."

****

Earlier, the AMA had told the Democratic Convention Platform Committee that health care would come out second best in the scramble for federal dollars if a new Congress enacted proposals to restructure the entire health system.

"Such proposals (which would include the labor-backed Kennedy-Corman bill) advocate a federal government undertaking to finance total medical care of all persons, regardless of their financial circumstances, through additional taxes (which) would result in an overpromise of benefits which could not be fulfilled," the AMA said in a statement filed with the Committee.

"Health care is too important an issue to be put in a position of competing for funds within the national budget along with defense, housing, energy research, AMTRAK, the postal service and other programs. We are concerned that health care would always come out second best."

Said the AMA:

"We are strongly concerned with and object strenuously to the proposals which would seek to restructure the entire health system. Such proposals are based upon theoretical paradigms and do not take into proper consideration the successes of, and general public satisfaction with, our delivery system. Such proposals would impose upon the public a single monolithic, no-choice system in the name of public responsiveness while ignoring the advantages and desirability of the pluralistic system."

Inadequate funding would result in a denial of care, the AMA cautioned, and at the same time impose added burdens on the American taxpayer, "already straining to live after meeting his tax obligations."

The Democratic Platform writers were told that limitations in responsible spending by government are compelling critical choices. It is imperative that the national parties establish responsible priorities in health programs in the interest of the American people, said the AMA statement.

The AMA pointed out that "there has occurred a growing public distrust and disillusionment in federal solutions to problems." At this time, everyone should "squarely face and recognize that the resources available to us as a nation are finite, that there are economic limits to what we can afford as a nation."

Other AMA positions before the Platform Committee:

*Maternal and Child Health—provide full and adequate funding.

*Public and Environmental Health—we must extend and expand efforts to control communicable diseases, with particular emphasis upon the control of and research on vaccines against venereal disease which in fact reached epidemic proportions.

*Department of Health—is needed at the cabinet level in order to maximize the ability of Government to respond appropriately to the health needs of all the American people, to eliminate duplication in programs, and to assure maximum efficiency . . .

*Mental Health, Drug Abuse, and Alcoholism—full and complete coverage in health insurance of mental health treatment . . . increased funding for manpower training and program implementation in alcoholism, drug abuse and mental health.

*Emergency Medical Services—extend high quality services to all communities in a national program of providing emergency medical service.

*Indian Health—increase substantially the program funding and upgrade and improve facilities and services.

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The General Accounting Office (GAO) has put a stop order on federal Medicaid payments to states for certain Medicaid programs where standards for long-term hospitalization certifying quality care have not been enforced. The payments, which could add up to $800 million annually, would be barred after July 1 unless states comply.

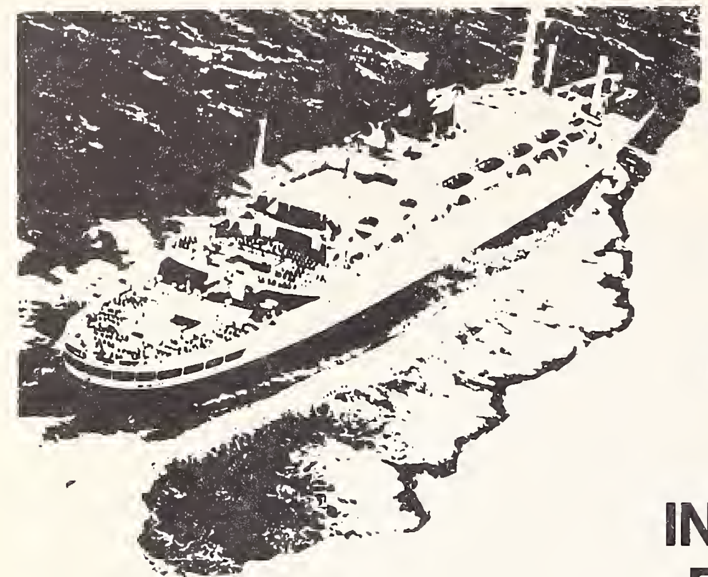
The President's Page

The National Joint Practice Commission was established in 1972 to make recommendations concerning the congruent roles of the physician and the nurse in producing quality health care to the American people. The commission which is supported by grants from both the American Medical Association and the American Nurses Associated consists of equal numbers of practicing physicians and nurses "who represent the interest of the public rather than of medicine and nursing per se" and it has undertaken the task of "defining new roles and relationships; recommending changes in professional education to support new roles; removing sources of professional differences, and assisting in the development and support of State Joint Practice committees." We in Connecticut do have such a joint practice commission.

"Joint practice is nurses and physicians collaborating as colleagues to provide patient care" is the statement of purpose which the National Commission adopted on June 6, 1975.

However, despite the good intent of the commission and the obvious desirability of the statement of purpose, there are on the horizon in this state harbingers of discord between the two most important members of the health care team, the nurse and the physician. That such disagreement might occur is easy to understand but that it is undesirable is equally obvious. In recent years there has been a very definite upgrading of the nursing profession. Nursing had ceased to be the desirable profession it had been in the past and changes were needed. Education was upgraded. Baccalaureate programs have been encouraged. Nursing skills in many individual fields have become commonplace. Thus we have the nurse practitioner, the coronary care nurse, the nurse involved with renal dialysis, and the like. Moreover, the general duty nurse has a greater knowledge of disease processes than did the nurse of years ago and is able to utilize this knowledge in patient care and education. This is all to the good and should merit our approval and commendation. It is only natural that with this increased competence, this increased knowledge and this increased role in over-all patient care, the nurse should seek a greater role in the decision-making aspect of patient care. There are areas of care which can be recognized as primarily nursing. In these areas complete autonomy for the nurse is warranted. The physician must recognize the need for a team approach and accept the fact that the nurse can make independent judgments in areas which are peculiar to the duties and functions of the nurse. However, while the physician must accept the new role of the nurse, the latter must be willing to accept its limitations. It must be clear that nothing in the role of the nurse allows any encroachment into the area of medicine. There must be one ultimate authority and this must remain the physician. As is stated in the New York Nurse Practice Act, "A nursing regimen shall be consistent with and shall not vary any existing medical regimen." The advances which have been made in the field of nursing are good if they provide improved patient care. They are not good if viewed largely as a means of improving the status of the nurse. Likewise the ultimate authority of the physician is required in providing for well regulated patient care but also is undesirable if its goal is simply to retail control. Let us hope that intelligent cooperation will allow us to develop programs in the interest of the patient without unwarranted concern over the specifics of our roles.

Hilliard Spitz, M.D.
President



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Reflections from the Dean's Office

Robert U. Massey, M.D.

"Those things which are said of God and other things are predicated neither univocally nor equivocally, but analogically . . . "

St. Thomas Aquinas: *Summa contra Gentiles*

Medicine and the humanities have found each other again. Medical schools are establishing divisions or departments of humanistic studies, or expanding departments of medical history to include philosophy, literature, ethics, and law. Societies and institutes have been formed to discuss and write about the complex relationships between medical science, medical practice, and human values.

There have been definitional problems as medicine and the humanities attempt to renew relationships. The physician as philosopher, or artist, or historian, or writer are the simplest kinds of bridges between the two cultures, the ones we most readily recognize. There are analogies in the physician as citizen, or husband, or father. The physician as ethical man, or educated man, may be the notions at the heart of the matter.

Pellegrino has tried to show that medicine may engage with philosophy in three different modes, indicated by the concepts of philosophy *and* medicine, philosophy *in* medicine, and philosophy *of* medicine.[1] Medicine relates to other disciplines, including science and law, in analogous fashion.

For over a century medicine has been wary of philosophy. Practitioners, being practical people, have asked "of what use?" Science and medicine came together easily because the application of scientific knowledge to the understanding of disease and to the development of medical technology was evident. Philosophy when it dealt with medicine had often been bad philosophy.

In recent years medicine has had to confront difficult ethical problems in new situations. Science could not be helpful, but philosophy seemed to have methods for finding the solutions to these problems. Accountability, responsibility, the conflict between want and need, between demands and the means to meet them, raised questions which science did not have the legitimacy to answer.

Medical ethics is the realm where physicians and medical students are most at home with philosophers. But philosophers are saying that there is more to it than that, that medicine and philosophy have a relationship analogous to that of physics and philosophy.

"Not very long ago the subject now called physics was known as 'natural philosophy'. The physicist is by origin a philosopher who has specialized in a particular direction."[2] Sir Arthur Eddington in *The Philosophy of Physical Science* was concerned with asking how we know what we know, and shows that physics, upon which all the other sciences rest, far from being an objective study, is based upon a kind of *apriori* knowledge "justified by the discovery that the universe which physical science describes is partially subjective."[3]

The difficulty becomes greater when the object of man's study is man himself, when the subject and the object are one. The philosophy of man and the philosophy of medicine share more ground than they occupy separately.

While philosophy and science seek to define, literature and history seek to describe. Against their description we hold up our experience and understanding by analogy. If we do not increase our understanding by comparing our experience with one remembered in literature, we at least increase our pleasure. I suspect that pleasure and increased understanding go together. Thomas Mann in *Buddenbrooks*[4] describes deaths from lobar pneumonia, typhoid fever, coronary occlusion, and stroke. He writes of psychopathy, depression, and dental abscesses.The story of *Doctor Faustus*[5] is the story of genius and central nervous system syphilis. All the facts that Mann so skillfully uses could be gotten from a textbook in much shorter time.

The pleasure comes from heightened understanding. To recall our own experience, while reading about another's, or to recall during an experience our earlier reading, and to read again, is the satisfaction of all of literature which is story telling.

It has to do with learning by analogy, which St. Thomas implied was the only way we do learn. Even the philosophers when they construct their logical or mathematical models are making analogies and seeking to learn from them. The reductionists will never see their fundamental particles; they will always describe them as being like something else.

Medicine and the humanities have much to learn from each other; they can be useful to each other. More importantly, by sharing their analogies, physicians and philosophers will take pleasure in sharing their insights.

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ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut, School of Medicine, Farmington.

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EDITORIALS

Adjuvant Chemotherapy in Breast Cancer

Recently stated concerns regarding adjuvant chemotherapy in breast cancer [1,2] are most reasonable. There can be no argument that longer follow-up is needed before definitive conclusions are drawn concerning benefits and toxicity. That is not to say, however, as some have implied,[2] that adjuvant chemotherapy is not an appropriate mode of therapy at the present time. To state the obvious, our therapeutic decisions at any given time must be based on information available at that time. The following information is available: (1) At least two thirds of patients with four or more positive axillary lymph nodes and one third to two thirds (depending on where one gets the data) of patients with one to three positive nodes will have a recurrence of their cancer within ten years.[3,4] (2) Post-operative irradiation does not alter survival figures.[5] (3) Three independent, controlled studies have demonstrated striking and statistically significant reduction in recurrences when adjuvant chemotherapy was administered to women with positive nodes.[6,7,8]

The administration of thiotepa on the day of and on the two days following mastectomy improved ten year survival of premenopausal women with four or more positive lymph nodes.[6] Administration of melphalan for two years reduced recurrences during a two and one half year period with results achieving statistical significance in premenopausal women.[7] A combination of cyclophosphamide, methotrexate, and 5 fluorouracil administered for one year reduced recurrences after 27 months at a level of statistical significance in pre- and postmenopausal women with four or more or one to three positive lymph nodes.[8]

There is no guarantee that prolonged disease free survival, although no small benefit in itself, will result in increased overall survival. Time will tell but in the meantime the odds obviously favor the patient whose cancer has not recurred. When one is considering a group of patients with a recurrence, and ultimate fatality, rate as high as in this one, withholding therapy, proved dramatically beneficial for a three year period, because results are not yet available for a ten year period seems unsound. Moreover, the ten year follow-up on patients treated for only three days with thiotepa indicates that survival will indeed be enhanced by chemotherapy and contradicts the view that decreased recurrence is a transient result of chemical oophorectomy.

If cure rate is enhanced by even a fraction of what appears likely, short term side effects, well documented in the relevant studies, are obviously acceptable. The long term toxic effect of greatest concern is development of a second malignancy. But the likelihood of developing recurrence of the first malignancy is infinitely higher than any reported incidence of second malignancies.[9]

The problem is not an easy one. More information is clearly needed. Patients should be entered, when possible, into protocol studies. In the meantime, we must make decisions, and either yea or nay to a therapeutic modality is a decision. If we waited for a ten year follow-up on every new therapy that demonstrated the kind of results seen at two to three years with adjuvant chemotherapy, many lives would undoubtedly and unnecessarily be lost.

Robert Erichson, M.D.

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The Connecticut Regional Medical Program

The Connecticut Regional Medical Program (CRMP) was terminated June 30, 1976. Its demise was applauded by a few, deplored by more, but, significantly, not even noticed by the great majority of people of Connecticut, even though they had received tangible and intangible benefits from its philosophy, programs and grants since 1966.

CRMP was one of the first five Regional Medical Programs approved by HEW in 1966. It was unique among RMP programs in its basic concept that improvement in the care of patients suffering from heart disease, cancer and stroke was contingent upon there being improvement in the financing and organization of the total system for the delivery of health services to people. CRMP has been nationally acclaimed for this approach.

CRMP, throughout its ten year existence, faced the serious handicap of kaleidoscopic shifting in priorities, programmatic direction and availability of financing from the central HEW RMP program. Difficult as it was for the staff and advisory board of CRMP to understand and to adjust to these shifts, they were virtually incomprehensible to individuals critical or suspicious of CRMP and the Federal program in general.

CRMP also found it difficult to develop a cooperative partnership with the state administration due, to a substantial extent, to jurisdictional disputes with the state and regional Comprehensive Health Planning Agencies (CHP). Consistent with its basic concept, CRMP, from its inception, assumed responsibility for planning and evaluation which the CHP agencies considered to be their prerogative, when they became truly operational three to four years later.

A review of the ten years of CRMP reveals many accomplishments—and some failures. On the credit side may be cited 1) implementation of the principle of regionalization within the state, and 2) stimulation and extension of the concept of full time, salaried chiefs of service in hospitals. However, of even more importance to Connecticut was the provision by CRMP of an invaluable mechanism or forum through its multi-disciplinary, professional and community interrelationships, by which linkages between various types of institutions and agencies could be facilitated or made possible. It provided and even made respectable, interchanges of ideas and discussion of opposing professional approaches and concepts for improved health care that have historically been suggested or tried with little support because of the opposition of proprietary or vested interests.

CRMP also provided the means by which expertise from a variety of sources could be mobilized to review, monitor and evaluate existing or proposed new programs. This was particularly valuable since, although the resources in Connecticut for such planning or evaluation are most substantial, little had been done previously to take advantage of these assets. CRMP was able to demonstrate the value of the involvement of the voluntary system in health analysis and planning by its close relationship with the Yale University Medical Center and the University of Connecticut as well as with consumers and state and local health and social service agencies.

Probably the greatest disappointment of CRMP has been its inability to plan for or to encourage the formation of a future statewide provider-consumer resource. CRMP has demonstrated the value of a mechanism for mobilizing research and professional resources in the state in a manner that can provide professional and objective studies and information upon which future regional and state health planning and regulatory decisions may be made and implemented.

Connecticut has currently embarked upon a new health planning and resources development program through the Congressional legislation of 1974 (P.L.

93-641). Guy Van Syckle's President's Page in *Connecticut Medicine* in September, 1975 noted a glaring weakness in this legislation in its lack of provision for such a resource, as had been available through CRMP. Its need will become even more apparent as the Health Service Agencies and the State Agency, as mandated under P.L. 93-641, are organized and attempt to function in Connecticut in the years to come. These agencies will have increased authority and responsibility but will have only limited funds and staff to carry out the necessary objective studies which will be essential if these new planning and regulatory agencies are to function in the best interest of the people of Connecticut.

Henry Clark, M.D., Arthur Rogers, Edward Morrissey and Gerald D'Oench are among the many associated with the Connecticut Regional Medical Program who deserve the thanks of the state for their pioneering contributions in the development of a mechanism that every state could use.

Albert W. Snoke, M.D.

Executive Director, Yale-New Haven Hospital, 1946-1968; Professor of Public Health, Yale University School of Medicine, 1946-1968; Coordinator of Health Services, Office of the Governor of Illinois, 1969-1973.

Students and *Connecticut Medicine*

As Editor, I would like to add a few words to Dr. Lawrence S. Cohen's preface to the symposium.

Some months ago, a committee of eight students from the University of Connecticut and Yale University Medical Schools met with Dr. Sherwin B. Nuland and me to discuss how and what they could contribute to the Journal. It was a stimulating meeting; it was positive enough so that we shall meet again in the fall.

One concrete result was the suggestion by a Yale student, Harvey Berger, for such an issue as this one. So with his drive, and working in collaboration with and under the supervision of Dr. Cohen, we have this excellent special Yale issue on cardiovascular disease.

Dr. Cohen joins me in commending Mr. Berger not only for his idea, but, more important, for translating it into this issue.

Fred Fabro, M.D.

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

A PATHOLOGIST'S VIEWPOINT

To the Editor: Dr. Guy Van Syckle, in one of his series of fine essays on the state of the medical profession, which appeared in *Connecticut Medicine* during his tenure as president of CSMS, addressed himself to the Federal Trade Commission (March *Connecticut Medicine*). Dr. Van Syckle suggests that one positive step we can take to protect the traditional values of medicine is to resist the FTC's attempt to rule that we are pursuing a trade and that our ethical code is in restraint of that trade.

I applaud his view and would like to respond to it from the viewpoint of a pathologist, since the pathologists have felt the heavy influence of commercial competition more keenly than our colleagues.

A few years ago, I was content to spend many "non-remunerative" hours at hospital tasks such as autopsy surgery and diagnosis, an extra share of committee activities, teaching, informal consultation, and developmental work in the growth of our medical facility as a whole.

I still spend my time the same way, but with a certain measure of anxiety and resentment because of changes wrought in medical practice that have resulted in a relentless encroachment of commercialism into many phases of our work. Many areas in the professional domaine of medicine are being chipped away and appropriated by paramedical groups. Nowhere has this been more dramatic than in the field of laboratory medicine.

If we of the medical profession have any unique claim to virtue, as we so often proclaim, then we must be vigilant about incursions into professional relationships by our own colleagues.

I was arrested by a full page ad in *Connecticut Medicine* June, 1976 p. 392 for a large Massachusetts Laboratory with collecting branches in Connecticut, offering chemical profiles at attractive rates. Nothing improper about the ad, a dignified presentation, but nevertheless, an ad for medical services, as we perceive them to be.

It was apparent that our editorial board had not considered this an example of the very thing we had been inveighing against; and, with all respect, I am convinced that my pointing out this relationship did not change their views.

If the pathologist's role as a continuously available consultant is not sufficient to remind our colleagues that we are an active part of the texture of good medical care, then we must look to ourselves. But we also have the right to ask our colleagues that as they leave us to our toils with our hospital administrators and lay boards, the practice of medicine has sprung a leak right here.

If the pathologist's role as a continuously available consultant is not sufficient to remind our colleagues that we are an active part of the texture of good medical care, then we must look to ourselves. But we also have the right to ask our colleagues that as they leave us to our toils with our hospital administrators and lay boards, the practice of medicine has sprung a leak right here.

And if a few of our colleagues are beguiled by financial advantages into "arrangements" with certain private laboratories (not necessarily the one in the ad, I hasten to point out), then they are widening the leak in the vessel in which we all ride together. Some of the arrangements I refer to were described on nationwide television and labeled kickbacks, in violation of Federal Regulations.

In Connecticut, similar practices were considered by our legal authorities to be "improper, but not illegal," (Bridgeport Telegram 5-19-76) a commentary on the dedication of our legal authorities to fair practices, but a more damaging commentary on the involved medical practitioners. If we permit ourselves to be content with ethical standards that even as business practices just slip under the wire of legality, then we may not be able to live up to Dr. Van Syckle's faith that we can resist the erosion of our avowed principles. The challenge to these values from within may turn out to be more destructive than the challenge from without.

It would seem incumbent upon a profession that wishes to protect its standards, through both its National and State societies to lay heavy stress on support *of* all its members *by* all its members and to include in such an injunction the pathologists.

John L. Meyer, II, M.D.

Putnam, CT

MORE ABOUT LAWYERS AND MALPRACTICE

To the Editor: Conversation about the malpractice condition sometimes elicits amusement, rarely horror, and occasionally some variety of sympathy. The malpractice frenzy could be consumerism unleashed, lawyer income opportunity unlimited, wealth redistribution in operation, or the medical profession being punished for some kind of laxity. On the assumption that maybe the medical pursuit of perfection was not stringent enough, the profession is taking it all in stride like the public acceptance of higher priced gasoline.

But the capacity to endure does not justify toleration. The power-intoxication that lets legal people exhale novel pronouncements and plan new tactics (like the selling of shares in lawsuits which has been proposed) should not go unchallenged. That doctors have been made hosts to predatory parasitism because of oddities in the administration of the law goes hand in hand with the fact that crime is increasing geometrically from that same archaic administration of law. The imperfections of legal process that victimizes doctors also makes the entire public victim to assaults.

Law is an honored profession, and the service of that profession is essential to social stability. But if we compare the advances in medicine with those of legal practice, it is like comparing an industrial society to a feudal system. Judges cry out at the backlog of cases compared with the number of courts and judges. Yet if the courts would add a modicum of modernity to all their majesty, they could wipe out that backlog.

It would speed up all judicial process if as a preliminary to court trial, cases could have a computer run through an algorithm. The opposing attorneys could feed thousands of statements into the computer instead of only the scores of opinions and bits of evidence they present in court. There could be multiple computer runs before any court appearance which should then be only for the final quality control of the judicial process. When the computer fails to come up with a clear pointer toward judgment then the portentous court trial should be used.

The general income level of lawyers is in relation to their fomentation of quarrels. The uninhibited climate for this process should not prevail any more than doctors could be allowed to knowingly and intentionally spread disease. Lawyers did overload the liability insurance business so that it had to lead to the "no-fault" concept. Where professional insurance is now totally unavailable for some doctors, it seems the inordinate greed of lawyers has put them in this jeopardy.

Members of the medical profession owe it to themselves and to the public to fight back against the yoke saddled onto them by lawyers. But there must first be a clear medical consensus to take organized action. Then it would be logical to seek to join forces with the insurance business. The public would have to be fully apprised of what is happening in a massive education program. Then corrective legislation should be sought.

As an aiming point for legislative reform three propositions are offered:

1. That the contingent fee practice be examined, and abolished or changed.
2. That plaintiffs' attorneys who ask punitive damages receive not one penny of it. Punishment is a public matter; there should be no private profit from it; plaintiffs' attorneys, like prosecuting attorneys, could well be government employees.
3. That the applications of the laws of torts be examined to determine whether they have overshot the mark.

An effort made by physicians to cure parasitism should bring about judicial reform, and by using technology for processing data the courts could diminish crime.

The Great Wall of China was built to form a barrier against horse-mounted barbarians that periodically overran developed communities. A wall must be put up against the conspiratorial aspects of the contingent fee. By the shibboleth "without it the poor man could not sue" the crime of champerty was forgiven and an unlimited hunting season proclaimed. Thus the liability insurance system as a safeguard against economic catastrophe was wiped out. This should not be. organized medicine must take action.

Sidney Vernon, M.D.

Willimantic, CT

FEDERAL PAPERWORK: ONE FIRM'S BURDEN

To the Editor: Federal paperwork is a torrent that threatens to inundate all businesses today. In an effort to stem the flood, the Commission on Federal Paperwork is holding public hearings around the U.S., inviting representatives of large and small businesses, local governments, and professional people to tell about their experiences with paperwork and soliciting their ideas on how to cope with it. At one of these hearings recently, I outlined our experience at Eli Lilly and Company.

- Lilly, a major research firm, spends more man-hours filling out government reports than it does in research for cancer and heart disease combined.
- The total cost of gathering information, analyzing data, and filling out government reports costs Lilly more than $15 million annually. If applied to the company's U.S. pharmaceutical business, it theoretically added about 50 cents to the price of every prescription for a Lilly medicine.
- The firm's application to the Food and Drug Administration for an arthritis drug consisted of 120,000 pages, not including the duplicate and triplicate copies. About 25 percent of these pages contained information that was important to the F.D.A.'s evaluation of the drug.
- A 153-page computer print-out was needed for the *index* of information the company submitted to the Environmental Protection Agency on *just one* agricultural product. Each entry on the 153 pages represented anywhere from three to 3,000 pages of information. Some of the information submitted was duplicated as many as four times in a year.

At that hearing, I suggested two ways to help reduce the amount of government paperwork as it affects our company and industry generally:

First, permit "certified summaries" to be submitted to regulatory agencies such as the F.D.A. and E.P.A. with the raw data available upon request.

Second, eliminate the blatant duplication of identical information required by the F.D.A. and the E.P.A. during the testing and approval of a single product.

Paperwork is only a symptom. The causes of the paperwork are the regulations issued by regulatory agencies. The greatest reduction in government paperwork for any business—large or small—can be achieved by limiting agency regulations to those that can pass a stiff cost/benefit analysis conducted by professionals independent of the agency or the businesses. Surely it is not beyond the capacity of our political system to have a reasonable degree of common sense prevail between business and government.

Richard D. Wood

Chairman of the Board
Eli Lilly and Company
Indianapolis, Ind.

Reprinted from Letters to the Editor, New York *Times*, June 21, 1976.

COMMENT ON *CONNECTICUT MEDICINE*

To the Editor: I wish to express my admiration for the exceptional job you are doing with *Connecticut Medicine*. It is an excellent Journal now that it is in your capable hands. It now hits the reading pile instead of the round file.

All good wishes for continuing success.

B. Jean Gretsch, M.D.

Newtown, CT

BOOK REVIEWS

Mechanisms of Contraction of the Normal and Failing Heart. Second edition. By Eugene Braunwald, M.D., John Ross, Jr., M.D., and Edmund H. Sonnenblick, M.D., 417 pp., Illustrated. Boston: Little, Brown and Co., 1976, $29.50.

Since publication of the first edition of this book eight years ago, our understanding of the fundamental mechanisms that regulate cardiac contraction in the normal and failing heart has grown dramatically. New data from both the basic science laboratory and clinical investigative units are now available, and older findings have been integrated into the clinical practice of cardiology. To accommodate this increase in knowledge, the second edition is over twice the length of the original.

This classic book spans many disciplines and is an integrated review, rather than a series of edited articles or monographs. Research is discussed and critically evaluated in a way that makes this book very easy to read and comprehend. A great virtue of this text is that so much of its content is based on the authors' personal observations in the experimental laboratory.

Liberal use is made of excellent illustrations drawn primarily from the authors' own studies. The legends are descriptive and contribute significantly to the book's overall clarity. An average of over one hundred selected references through 1975 are included in each chapter. The book concludes with a detailed index which also makes it useful as a reference source.

This text is unusual in the skill with which the cardiovascular system is discussed at various levels of complexity. It begins with chapters on the structure and function of the myocardial cell, the mechanics of contraction in isolated muscle, and the ultrastructural basis of Starling's Law. In logical sequence, chapters on the mechanisms of contraction in the whole heart, assessment of cardiac contractility and ventricular function, and interpretation of myocardial energetics follow. Regulation of coronary blood flow and circulatory control in the intact organism at rest and during exercise are considered in detail. The book concludes with definitive chapters on heart failure and myocardial ischemia.

In summary, these three authorities in cardiology have produced a work which can be read profitably by undergraduate medical students and house officers, as well as by teachers and practitioners of clinical or investigative cardiology.

HARVEY J. BERGER

Yale University School of Medicine

Symposium: New Perspectives on Coronary Artery Disease—1976

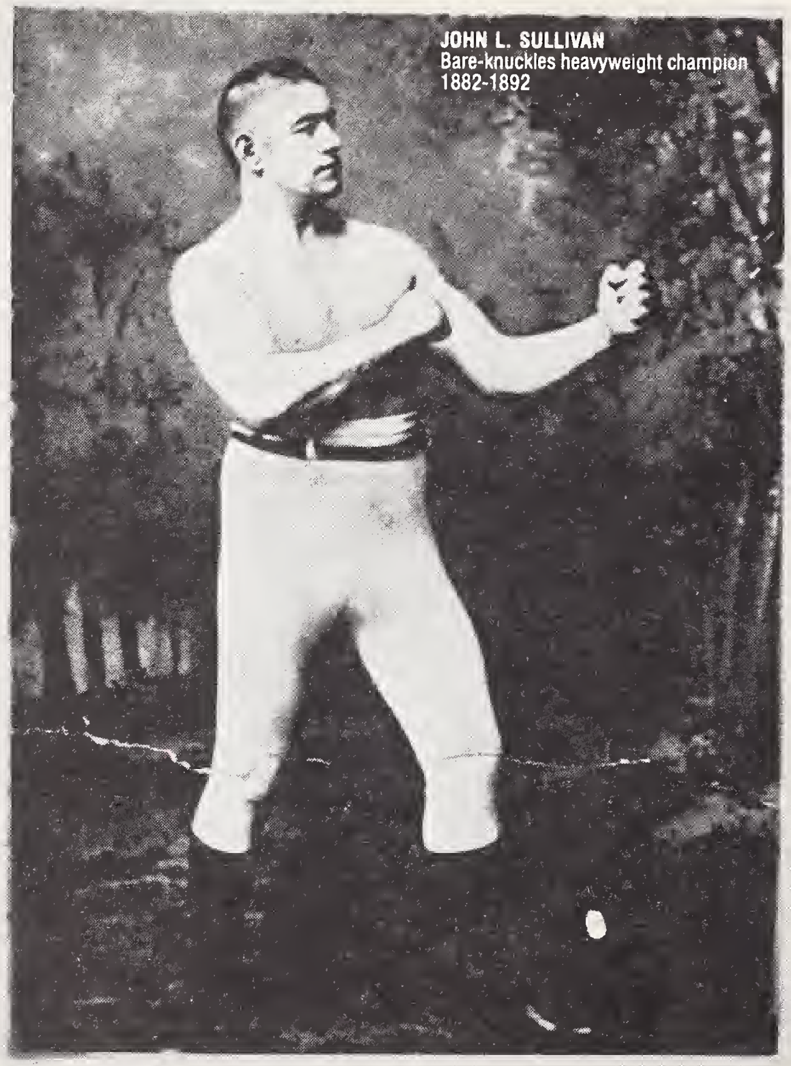
American Heart Association, South Central Connecticut and Greater Bridgeport Chapters

September 18, 1976

The American Heart Association of Greater Bridgeport and South Central Connecticut Chapters are sponsoring a symposium entitled "New Perspectives on Coronary Artery Disease—1976" on Saturday, September 18, 1976 at the Sheraton Park Plaza, New Haven. This symposium is open to all physicians and nurses in Connecticut. Four topics will be presented: *Indications for Coronary Arteriography and By-Pass Surgery* by Lawrence S. Cohen, M.D., Chief of Cardiology, Yale-New Haven Medical Center; *Utility of Exercise Stress Testing* by Stephen Epstein, M.D., Chief, Cardiology Branch, National Heart and Lung Institute; *Radioisotopes and Diagnosis of Coronary Artery Disease* by Barry L. Zaret, M.D., Cardiology Division, Yale-New Haven Medical Center and *The State of Surgery for Coronary Artery Disease* by Alexander S. Geha, M.D., Cardiothoracic Surgery Section, Yale-New Haven Medical Center and John Collins, M.D., Chief, Cardiothoracic Surgery, Peter Bent Brigham Hospital.

The Connecticut Academy of Family Physicians has approved the program for 5 elective hours of credit. For further information contact either the American Heart Association of South Central Connecticut, 1184 Chapel Street, P.O. Box 1673, New Haven, Ct., 06507, 777-6465, or the Greater Bridgeport Chapter, 185 Park Avenue, Bridgeport, Ct., 06604, 367-7421.

Famous Fighters



NEOSPORIN® Ointment

(polymyxin B-bacitracin-neomycin)

is a famous fighter, too.

Provides overlapping, broad-spectrum antibacterial action to help combat infection caused by common susceptible pathogens (including staph and strep).

Each gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units; zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated) for topical infections, primary or secondary, due to susceptible organisms, as in: • infected burns, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection.

Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing. **CONTRAINDICATIONS:** Not for use in the eyes or external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of the components. **WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended. **PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs. **ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

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North Carolina 27709

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Summary of Actions
Council Meeting
Thursday, June 17, 1976

Attendance

Present were: Drs. Spitz, Friedberg, Freedman, Backhus, Nolan, Grendon, Van Syckle, Hess, Cramer, Fabro, Granoff, Robinson, Harkins, James, Sonnen, Whalen, Beck, Sadowski, Vidone, Eslami, Parrella, Zlotsky and Middleton.

Also present were: Mrs. Lindquist, Dr. Steven Bongard (UConn), Mr. Sweeney and Dr. Richards.

Absent were: Drs. Johnson, Canzonetti, Bradley, Kamens, Mendillo, Krinsky, McGarry, Ahrens, Magram and Barrett.

Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of May 19, 1976.

Life Membership

It was VOTED to approve an application for Life Membership received from the following eligible Active Member:

Edward W. Oxnard, 15 Chipman Drive, Cheshire.

Date of Next Meeting

The Chairman set the date of the next meeting for Wednesday, July 21, 1976.

Old, New and Special Business

Reports—Fiscal Subcommittee

The Council acted on a series of reports of the Subcommittee as follows:

(a) *Investment of Funds Program:* VOTED to receive as information a report of the Subcommittee that the Investment Program was in satisfactory condition and continues to show modest growth.

(b) *5th Biennial Conference on CME for State Medical Associations and Specialty Societies:* VOTED to authorize Vincent A. DeLuca, Derby, and Jerome K. Freedman, New Haven, to attend the subject Conference (Chicago, Ill., October 5-7, 1976) and to approve a recommendation of the Fiscal Subcommittee that Drs. DeLuca and Freedman be reimbursed for usual expenses incurred by their attendance in an amount estimated at $325 each.

(c) *Employees Pension Plan:* VOTED to approve a recommendation of the Plan's Administrators that $11,050 be expended to fund revisions made in the Plan's provisions and policies which are required under the regulations of ERISA.

Resignations, Appointments, Etc.

(a) *Committee to Study Perinatal Morbidity and Mortality:* It was VOTED to appoint John R. McNamara, Norwalk, to membership on the Committee for 1976-77.

(b) *CSMS Representatives, Connecticut Cancer Epidemiology Program Council:* It was VOTED to approve recommendations submitted by the Cancer Coordinating Committee for nominations for subject CSMS representatives as follows: (*Representatives* - E. Tremain Bradley, Norwalk and John L. Meyer, Putnam (four year term); *Alternate Representatives* - Hugh F. Lena, New London and Robert E. Sax, Bridgeport (two year term).

(c) *Committee on Peer Review Systems:* It was VOTED to accept, with regret, the resignation of David L. Warren, Manchester, as a member of the Committee.

(d) *Committee on Third Party Payments:* It was VOTED to accept, with regret, the resignation of Ezra J. Epstein, Stamford, as a member of the Committee.

(e) *Committee on Program of the Scientific Assembly:* Having been apprised by James E. C. Walker, Farmington, a newly-elected member of the Committee, that he will be on sabbatical leave from August, 1976 until June, 1977, the Council VOTED to ask the Committee chairman if it is acceptable to him to have Dr. Walker absent from participation in the work of the Committee for the period stipulated.

(f) *Liaison Committee with Connecticut Pharmaceutical Association:* It was VOTED to accept, with regret, the resignation of Bradford S. Colwell, Hamden, as a member of the subject Committee.

(g) *CSMS Nominee, State Board of Examiners for Physical Therapists:* At the request of the President of the subject Board, the Council VOTED to nominate, for appointment by the Governor, Philip B. Arnold, Wallingford, for a five-year term as a member of the Board, succeeding Thomas F. Hines, Wallingford, whose current term expires on June 30, 1976.

(h) *Correction of Election in Error, Judicial Committee Member:* The Council was apprised that Kurt Pelz, Clinton, while a member of the Judicial Committee for the term 1974-78, had been replaced in error by the election (House of Delegates) of Louis C. Backhus, Waterbury, in 1975 to complete the unexpired balance of Dr. Pelz's term. Having confirmed that Dr. Pelz had been replaced in error in the 1975 elections, the Council VOTED to accept, with thanks, Dr. Backhus' voluntary resignation from his post on the Judicial Committee, thus restoring Dr. Pelz's membership on the Committee for the term 1974-78.

(i) *Subcommittee on Quality and Levels of Care, Blue Ribbon Committee to Investigate the Nursing Home Industry in Connecticut:* At the invitation of the co-chairpersons of the subject Subcommittee, the Council VOTED to appoint the following members of the Society to participate in the work of the Subcommittee: Lawrence B. Ahrens, New Britain; Marvin Garrell, Fairfield; Archie J. Golden, Wethersfield; and Robert W. Harkins, Woodbury.

(j) *Connecticut Alcohol Advisory Council:* Acting on the request of the Secretary of the subject Advisory Council, the Council VOTED to nominate J. Richard Gaintner, New Britain, to succeed himself as a member of the Advisory Council for a term of three years. It was further VOTED to nominate Marie K. Carter, Norwich, for membership on the Council for a like term, replacing Robert E. Brubaker, New Haven, who indicated that he would prefer not to be nominated to succeed himself. The Governor will act on these nominations re appointments.

(k) *CSMS Participants, P.L. 93-641 Data Conference:* It was VOTED to request Mehdi S. Eslami, Waterbury, and Orvan W. Hess, New Haven, to attend this Conference (Cromwell, June 24, 1976) as representatives of the Society.

Further Discussion re Suggestions for "Unified Dues"

Tabled at the meeting of 5/19/76, for discussion at this meeting, were four suggestions for "unified dues" which were offered at the 4/28/76 meeting of the House of Delegates as alternatives to "unified membership" and referred to the Council's Subcommittee to Study and Revise the Bylaws for study and report to the House "at a future meeting." After discussing a recommendation of the Screening Committee that only those suggestions which would further the concept of "unified membership" be referred for study and report, the Council VOTED to refer all four suggestions to the subject Subcommittee.

Communication—NHCMA Board of Governors

It was VOTED to accept for filing a communication of the NHCMA Board, and to act on two recommendations contained therein as follows:

(a) *Hospital CME Programs:* VOTED to (1) Endorse the concept that all physicians and osteopaths should—upon their own initiative—be able to participate in any ongoing educational programs being conducted by the various hospitals in the state regardless of whether or not they are members of those hospital staffs and if necessary they should pay a reasonable fee for mailings and record keeping; (2), to send notice of this endorsement to the persons in charge of CME programs in the general hospitals of Connecticut, urging that, within the limits of personnel and physical resources available, the concept be implemented in all such hospitals; and (3), to request that the CSMS office be notified of actions taken to implement the concept by each of the general hospitals.

(b) *Nurses' Strike at Windham Memorial Hospital, Willimantic:* VOTED to receive as information the opinion of the NHCMA Board that the matter of the Nurses' Strike at Windham Memorial Hospital is of great significance and since the matter has been referred with a specific charge to the CSMS Committee on Hospitals it should be closely monitored by the Council.

Draft of CHA Policy Statement on "Informed Consent"

It was VOTED to receive as information the subject draft document prepared by the Connecticut Hospital Association, and also a letter received from Philip R. Dunn, CSMS legal advisor on professional liability matters, in which he advocated that a much less complicated informed consent statement be utilized by individual physicians. It was further VOTED, on recommendation of the Committee on Hospitals, that the CHA document be referred for study, report and recommendation to the Council, to the CSMS Committee on Professional Liability, and to accompany the CHA document with Mr. Dunn's letter on the same subject. The CHA draft statement had been discussed jointly at a May 26 meeting of the CSMS Committee on Hospitals and the CHA Council on Professional Services.

Statement on CMS Policy re Payments for Tubal Ligations

Having requested same from the CSMS Section on Obstetrics-Gynecology, the Council VOTED to endorse a statement drafted by the Section as follows: "CMS practice is to pay physicians for the performance of tubal ligation only when it is performed as a separate operation, unconnected with obstetrical delivery. In order to prevent prolongation of hospital stay, to avoid administration of a second anesthesia and to supply optimum prepayment coverage for the patient, the tubal ligation procedure should be paid for by CMS regardless of the time relationship to obstetrical delivery. Decrease in benefits payment by means of a lesser payment for the combined procedures of delivery plus sterilization is not considered to be optimum or realistic coverage for the patient."

It was further VOTED to urge Connecticut Medical Service, Inc. to adopt and implement this policy statement of the Council; also, to inform the Committee on Hospitals, the CHA Council on Professional Services and the Section on Obstetrics-Gynecology of the action taken by the Council.

Report—CSMS Representative, Commission of Hospitals and Health Care

It was VOTED to receive as information a verbal report made by Sidney L. Cramer, Hartford, a Commission member, on an unfavorable report on a extended care facility, made by the State Health Department, which had been brought to the Commission's attention in conjunction with the facility's application for a rate increase. The main point made by Dr. Cramer was that the on-site inspections of nursing homes now being conducted both by the Health Department and the Social Services Department are proving effective in bringing about needed improvements in the premises and services provided by such facilities.

Recommendation for Endorsement—Committee on Organ and Tissue Transfers

On recommendation of the subject Committee, the Council VOTED to endorse "the proposal (of the National Red Cross Blood Program) of peer inspection of blood banks in the state through regional licensure via the Connecticut Red Cross Blood Program."

The "Forty Year Membership Award" Program

It was VOTED to accept the report, and approve the recommendations, of Staff concerning the change to be made in 1977 whereby the "Fifty Year Membership" award program will be replaced by the subject "Forty Year" program. The Staff report indicated that, in 1977, 312 members of the Society will have completed at least 40 years of membership; also, projected that upward of 100 members will qualify for the subject award annually within the next several years. Concerning implementation of the program, Staff recommended that the "award" consist of a certificate (or a plaque) *or* a pin, but not both, and that the presentations to members be made by mail, accompanied by a letter of congratulation signed by the President of the Society. By VOTE, the Council opted for a "certificate" to constitute the award to be presented under this new program.

Request—State Department of Social Services

In response to a request of the subject Department that an impartial evaluation be undertaken by the Society of a series of reports on nursing homes filed by a physician formerly employed by the Department, the Council VOTED to request the President, in consultation with the Chairman, to appoint an ad hoc committee to make the requested evaluation and designate the chairman thereof. The President appointed the ad hoc committee as follows: Kurt Pelz, Clinton, chairman; Lawrence H. Ahrens, New Britain; Archie J. Golden, Wethersfield; James M. Hollister, Groton; Isadore H. Friedberg, Newington; and Marjorie A. Purnell, Rockville.

Sites and Dates for Meetings of the House of Delegates

Semi-Annual Meeting, 1976: The Council VOTED that the meeting be held at the Park Plaza Hotel, New Haven, on Wednesday, November 17, 1976.

Annual Meeting and Scientific Assembly, 1977: The Council VOTED that the meetings be held at the Hartford Hilton Hotel, Hartford, with the House to meet on Wednesday, April 27, 1977 and the Scientific Assembly on Thursday, April 28, 1977.

Proposal re Voting to Elect AMA Delegates and Alternate Delegates

It was VOTED to refer to the Subcommittee to Study and Revise the Bylaws, for feasibility study and report to the Council, a proposal that the Bylaws be amended to provide that only members of the CSMS House of Delegates who are members of the AMA shall be eligible to vote in the elections of AMA Delegates and Alternate Delegates.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on June 17, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

OBITUARIES

Harold S. Barrett, M.D.
1915-1976

Dr. Harold S. Barrett, M.P.H., died June 7, 1976, at the age of 60, a few days after suffering a stroke.

Serving at the time of his death as Deputy Commissioner, Connecticut State Department of Health, Dr. Barrett had started work as a department physician in 1950, becoming Deputy Commissioner in 1953 under Commissioner Stanley Osborn, M.D.

Dr. Barrett was graduated from Brown University in Providence in 1937, where he was elected to Phi Beta Kappa and Sigma Xi, and from Harvard Medical School in 1941. In 1947 he received a master of public health degree at the University of Michigan School of Public Health. He was a lecturer in public health at Yale University in 1947.

He was in active military service, assigned to the Public Health Service in 1944-1950, with duty in 48 states, Puerto Rico and the Philippines. He was discharged a surgeon and awarded the Victory and American Theater Medals.

His long-held concern for preventing and alleviating chronic illness took him into administrative work on topics such as the cancer registry, transportation of the sick and injured, home health aide services and information and referral services. As one of his many health-related duties, he served on the Medical Examining Board for the State Employee Retirement Commission since 1957, and was its chairman since 1972.

Although Harold had broad interests in several areas of human services, his true love was for camping and scouting. His hours of professional and leisure time spent in these pursuits have made him a nationally known leader in scouting and camp safety. He has developed safety and health standards for recreational and camping activities that have become part of the public health code and a model for similar regulations adopted in other states. He was deputy chief medical officer for the 1967 World Scout Jamboree and two national Jamborees. For three terms, he was president of the Charter Oak Council of Boy Scouts and he has been honored on numerous occasions for his scouting activities.

An active community leader, Dr. Barrett was a member of many professional and civic organizations. He was president of the Connecticut Gerontological Society in 1957, of the Connecticut Academy of Preventive Medicine in 1958 and the Connecticut Public Health Association in 1959. He was also a fellow of the American Public Health Association, American Thoracic Society, and American College of Preventive Medicine. He was a member of the American Medical Association, American Association of Public Health Physicians, the Connecticut State Medical Society and the Hartford County Medical Association.

Dr. Barrett set an example of unstinting attention to his substantial official responsibilities.

His habitual style of approaching tasks constructively, vigorously and with good spirit, brought him appreciation everywhere from people with whom he had contact. His judgement and skill in public health matters were greatly respected.

He leaves his wife, Virginia Parsons Barrett, his father, Owen E. Barrett, and his son David O Barrett, all of Manchester. David will enter Brown Medical School in the fall. He is also survived by two daughters, Mrs. Samuel K. Stewart of Glastonbury and Mrs. Paul M. Rothberg of Newington.

Douglas S. Lloyd, M.D.

Morris A. Hankin, M.D.
1904-1976

Dr. Morris A. Hankin, after a long illness, died on March 21, 1976 in Florida.

He was born in Russia and came to New Haven at the age of one. He attended Yale University, Class of 1926, spent three years, 1926 to 1929, as bacteriologist with the Lederle Company, and graduated from the Long Island College of Medicine in 1933. He was House Officer and Resident at Grace Hospital and practiced in New Haven during his entire life time.

He was an Associate of the American College of Physicians and belonged to the State, County, and City Medical Societies.

Hank, as he was affectionately known by his many friends, was a dedicated and devoted physician, sensitive and sympathetic to his patients' problems, whom he served unselfishly, with understanding and compassion.

In memoriam, Dr. Hankin has entered into the Peace of Life Eternal but will continue to live on earth in the acts of goodness he performed and in the hearts of those who cherish his memory.

He is survived by his wife, Sadie, his daughter, Joan, and two grandchildren, Andrew and Elizabeth to whom he was a devoted husband, father and grandfather.

Max L. Berlowe, M.D. and
William B. Koufman, M.D.

Wayne P. Whitcomb, M.D.
1920-1976

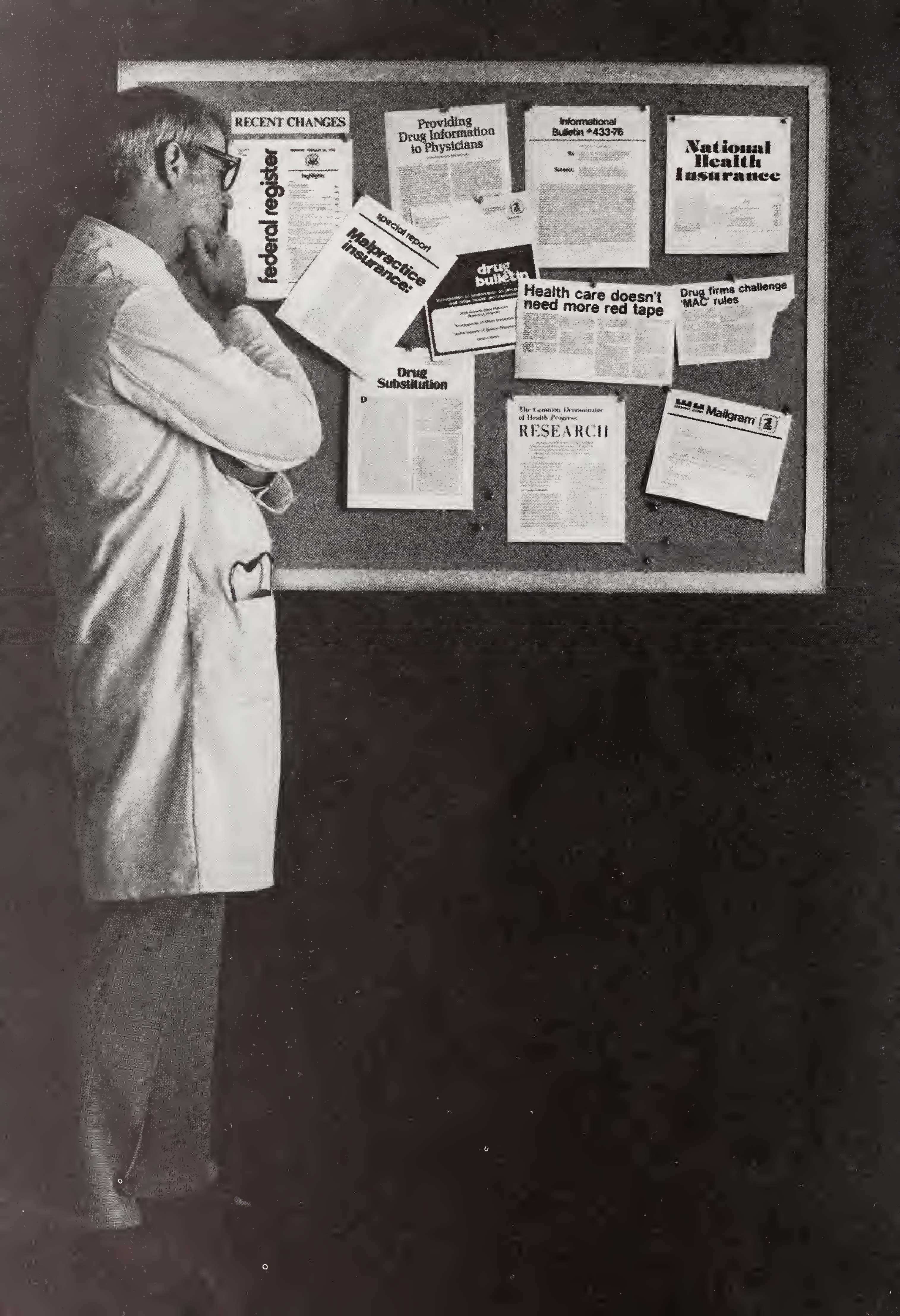
Dr. Wayne P. Whitcomb recently died at the Hospital of St. Raphael where he had been director of the Radiation Therapy Center. He was also serving as associate clinical professor of therapeutic radiology in the Yale School of Medicine.

He was born in Norwich, Connecticut, attended schools in New London, graduated from Duke University in 1942 and the University of Vermont Medical School in 1945, interned at Stamford Hospital. Dr. Whitcomb served two years in the U.S. Army, and then had a residency in radiology at St. Raphael's. After his residency he spent a year in the National Cancer Institute, Manchester, England and then returned to the Hospital of St. Raphael where he designed the therapy center, the first of its kind in New England.

Dr. Whitcomb took an active role in medicine a few of his positions having been president of the staff at the Hospital of St. Raphael, president and founder of the Radiologist Society of Connecticut, president of the New Haven Unit of the Cancer Society and was a member of the Governing Board of the New Haven County Medical Association at the time of his death. A member of the Connecticut State Medical Society and the AMA, he was also an active leader in the community of Orange, Connecticut, where he resided. Just a few of his honors there were "man of the year" by the Orange Rotary Club, Past Chairman of the Park and Recreation Commission, a superintendent of the Orange Congregational Church Sunday School, a member of the Volunteer Fire Department and a 32nd degree Mason.

The ultimate compliment we can pay Wayne is that he was a complete physician and everyone who came in contact with him is richer for the experience.

George A. Bonner, M.D.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Ironically, this dilution of physician control has taken place against a background of growing evidence that purportedly equivalent drug products may be inequivalent, since neither present drug standards nor their enforcement are optimal. In fact, the FDA itself says it has not enforced the same standards for hundreds of "follow-on" products that it had applied to the original NDA approvals. Thus physician control over patient therapy is being eroded with a risk that patients may be exposed to drugs of uncertain quality.

The major advertised claim for substitution is reduced prescription prices for consumers. Yet no documentation of any significant savings has been produced.

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The drug lag The future of drug and device research depends upon a scientific and regulatory environment that encourages therapeutic innovations. The American pharmaceutical industry annually is spending more than $1 billion of its own funds and evaluating more than 1,200 investigational compounds in clinical research. Disease targets include cancer, atherosclerosis, viruses and central nervous system disorders, among others. But there is a major barrier to the flow of new drugs to your patients: The cost of the research is more than ten times what it was, per product, in 1962; and whereas governmental clearance of new drug applications took six months then, it commonly consumes two years now.

The FDA needs adequate time, of course, to consider data. But it is equally clear that the present approval process contributes to needless delay of needed therapy. That's why the increased efficiency of the drug approval process is vital to all our futures.

If these issues concern you, we suggest that you make your voice heard—among your colleagues and your representatives in State legislatures and in Washington.

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The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Family Practice: 28 year old physician presently in practice in Canada wishes to come back to his native state. Eligible for Conn. license. Yale graduate. M.D. from McGill. Internship at St. Mary's Hospital, Montreal. Solo or group practice in medium or small sized community. William J. Waldman, M.D., 51 Oakwood Crescent, Pincourt, Quebec, Canada.

Internal Medicine (Nephrology): Available July 1976. Board eligible. Completing Fellowship in Renal Diseases at Rhode Island Hospital (Brown University), Providence, R.I. Hari K. R. Bhasin, M.D., 1145½ Hartford Avenue, #1C, Johnston, RI 02919.

Internal Medicine: Available July 1976. Board certified by ABIM. Board eligible in gastroenterology. Fully trained in endoscopy, polypectomy, hepathology and GI radiology. Completing fellowship at Mt. Sinai in NYC. 30 years old. Complete CV on file at CSMS. (P.H., M.D.)

Internal Medicine: Available now. Completed rotating residency at St. Mary's Hospital, Waterbury. Connecticut license. Vincent Ippolito, M.D., Hover Avenue, Germantown, NY 12526.

Internal Medicine (Cardiology): Available now. FLEX. Board certified by ABIM. Group or institutional practice. Resume on file at CSMS. S.K. M.D.

Internal Medicine (Hematology-Oncology): Available with short notice. Board certified. Group or associate practice desired. Thomas Twele, M.D., E-5 Oxford Towne Apts., New Hartford, NY 13413.

Internal Medicine (Nephrology-Hypertension): Board certified. M.D. from Columbia. Trained at Dartmouth-Hitchcock. Presently employed at VA Hospital in Charleston, S.C. while husband, a general surgeon, completes Navy duty. Candace Cooper Walworth, M.D., 936 Tall Pine Road, Mt. Pleasant, SC 29464.

Internal Medicine (Cardiology): 37 years old. Board eligible. FLEX. Fully trained in non-invasives, VCG, FCG, EKG, stress testing, pacemakers, echo, CCU, ICU. Available July 1976. Connecticut license. Completing program at St. Vincent's in Bridgeport. Resume on file at CSMS.

OB/GYN: Available Spring of 1977. M.D. from University of Illinois. Trained at Johns Hopkins and St. Lukes in Chicago. Board eligible. Presently in the Army at Fort Bragg. Solo or group practice. Terrence J. Horrigan, M.D., 432 Hallmark, Fayetteville, NC 28303.

ENT: Available September 1976. Connecticut license pending. Board certified. Completing duty with U.S. Army in Germany. Enjoys outdoor activities. Desires solo, group or associate practice in medium sized community. M.D. from Upstate Medical Center at Syracuse. Completed residency at University of California in San Francisco. Resume on file at CSMS.

Pediatrics: Took FLEX in Conn. in June. Desires institutional position. Wife is an RN. Trained in Taiwan. Presently with the Pediatrics Department of Hahnemann Medical College and Hospital, Philadelphia. George Li., M.D., 5818 N. 13th Street, Philadelphia, PA 19141.

Pediatrics: Connecticut license. Board certified. Available October 1976. Completed training at St. Raphael's in New Haven. Several years experience in clinics in the New Haven area. 39 years old. Desires group or institutional setting. C.V. on file at CSMS.

Surgery (Cardiovascular-Thoracis): Board certified in general surgery. Board eligible in thoracic surgery. Connecticut license. Available immediately. Wishes to locate permanently in Connecticut community. Complete resume on file with CSMS.

Surgery (General): Available now. Board eligible. FLEX. Group or institutional practice. Wife has completed 3 yr. residency in anatomical pathology. Chandy Samuel, M.D., 408 Prospect Avenue, Syracuse, NY 13203.

Emergency Room Physician: Available July 1976. Completing three year program at the Sinai Hospital in Southfield, Michigan. Graduate of the University of Buenos Aires in Argentina. 28 years old. FLEX. Michigan License. Mario A. Roskind, M.D., 22307 LaSeine, Southfield, MI 48075.

Occupational Medicine: Family Physician interested in part time position. 8 years of experience with industrial firm. Fairfield County. Contact CSMS.

Family Practice: Sat for FLEX in June 1976. 32 years old. Available immediately. Trained in India, in Chicago, Illinois and in Pennsylvania. R.R. Sheth, M.D., #104, 8A Richland Lane, Camp Hill, PA 17011.

Pediatrics: Connecticut license. Available October 1976. Completing training at Reidsville, Georgia. Internship programs at St. Raphael's Hospital in New Haven, and at University of Nebraska and Royal Oak, Michigan. Group or institutional practice. H.U. Subhani, M.D., P.O. Box 910, Reidville, GA 30453.

Urology: Available immediately. Solo or associate program. M.D. from Georgetown; internship and residency at Vanderbilt. Research and residency at University of PA. 33 years old. Married. William F. Badbois, M.D., 323 Walnut Hill Lane, Havertown, PA 19083.

General Medicine: Part time position desired. Greater Hartford area. Contact CSMS.

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(If no name is listed, contact the Physician Placement Service for more details.)

Director of University Health Service: Wesleyan University is seeking a physician to coordinate the delivery of primary care to a coeducational population of 2400 students. Contact Dean of the College, Wesleyan University, Middletown, CT 06457.

Family Practice: Associate needed to join a solo practitioner in very active practice. Ideal location on the Connecticut coast. Morris Sulman, M.D., 203 Montauk Avenue, New London, CT 06320.

Emergency Room Physician: A modern hospital located in Putnam, Ct. 45 minutes from Providence, Hartford and Worcester. Full time, competitive salary, liberal benefits. Connecticut license required. Call collect (203) 928-6541, Mr. Charles F. Schneider, Executive Director, Day Kimball Hospital, 320 Pomfret Street, Putnam, Connecticut 06260.

Allergy: Physician anticipates retiring soon. Irving H. Uvitsky, M.D., 3101 Main Street, Bridgeport, CT 06606.

Anesthesiology: Hospital in Greater Hartford area. Send resume to CSMS.

Emergency Room Opportunities: Park City Hospital, Bridgeport; Bridgeport Hospital, Bridgeport; Lawrence and Memorial Hospital, New London; Day Kimball Hospital, Putnam; Johnson Memorial Hospital, Stafford Springs.

Family Practice: Active, solo practice available in lower Fairfield County. Coastal community. University affiliated hospital. Contact CSMS.

Internal Medicine: Large practice of recently deceased physician available in Middletown. Contact CSMS.

Pediatrics: Board eligible or certified. To join medical staff of four at Mansfield Training School to provide medical care to handicapped. State benefits. Salary $28,067 to $33,245. Sherwin Mellins, M.D., Director, Medical and Clinical Services, State Department of Mental Retardation, 79 Elm Street, Hartford, CT 06115.

Occupational Health: Connecticut license. State Department of Health. Contact Mr. John J. Crowley, Personnel Administrator, 79 Elm Street, Hartford, CT 06115.

Family Practice: Well established practice available with modern office-home. Building specifically designed by well known architect, located on beautiful lake in an urban community. Office, with separate entrance, has 5 rooms, fully equipped. Health reasons force the MD to leave the area. Frank F. Northman, M.D., 753 Lakeside Drive, Bridgeport, CT 06606. (203) 372-1169 or 333-1092.

New England Continuing Medical Education
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For further information on course content, registration, and hotel accomodations, please write the AMA Department of Meeting Services, 535 North Dearborn, Chicago, Illinois 60610.

Beaumont Homestead Restoration
October 10, 1976

The Beaumont Homestead Preservation Fund will mark the completion of first steps toward restoration and preservation of the birthplace and boyhood home of Dr. William Beaumont in Lebanon, Connecticut on Sunday, October 10th at 2:30 P.M. The combined efforts of many physicians and others with interests in Connecticut history have resulted in relocation of the house from its original site a few miles North of the Lebanon Green to a more accessible spot next to Governor Trumbull's House, the Wadsworth Stable and the Revolutionary War Office. The sponsors of this work of historic preservation include, in addition to the Fund, the Lebanon Historical Society, the Connecticut Chapter of the DAR, the Town of Lebanon, the Connecticut State Medical Society, the Beaumont Medical Club at Yale and many concerned individuals. Members of the Society are cordially invited to attend the hearth-warming ceremonies. The program will include brief addresses by representatives of sponsoring groups, as well as a tour of the House. For more information, write or call J. Wister Meigs, M.D., 30 College St., New Haven, Ct. 06510. Tel. (203) 436-8904.

SPECIAL NOTICES

SYMPOSIA ON THE SOCIO-MEDICAL MANAGEMENT OF THE GERIATRIC PATIENT
September 8, 1976

Time:	12:45 to 5:00, reception to follow no registration fee necessary
Place:	Sheraton Hartford 315 Trumbull Street Hartford, Ct
Sponsors:	Connecticut State Medical Society Connecticut Academy of Family Practice American Geriatrics Society
Speakers:	Dr. David Dressler U.Conn., New Britain General Hospital Dr. Ian Lawson Hebrew Home for the Aged Dr. Alberton DiMascio Tufts University Med. Film: "What do you Want to be when you Grow Old?" "Treatment of Psychosis in the Elderly"

For Registration card contact:
Don Hutton, 26 Pilgrim Drive, Tolland, CT 06084

Credits:

This symposium is acceptable for 4 credit hours in Category I of the Physicians' Recognition Award of the AMA and 4 Credit hours of prescribed credit for the Connecticut Academy of Family Physicians.

ST. FRANCIS HOSPITAL
September 8, 1976

The Immunology Division of the Department of Laboratories is pleased to announce the following lecture as a part of the continuing series of lectures on "The Current Concept and Trend in Clinical Immunology."

Title:	Leukocyte Dysfunction in Humans
Speaker:	Peter A. Ward, M.D., Professor and Chairman, Department of Pathology, University of Connecticut School of Medicine.
Time:	11:00 a.m. of September 8, 1976.
Place:	Amphitheater ST. FRANCIS HOSPITAL 114 Woodland Street Hartford, Connecticut
For Information:	Jayson Hyun, M.D. Director of Immunology Laboratory, Tel: (203) 548-4368

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Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 40 SEPTEMBER 1976 NUMBER 9

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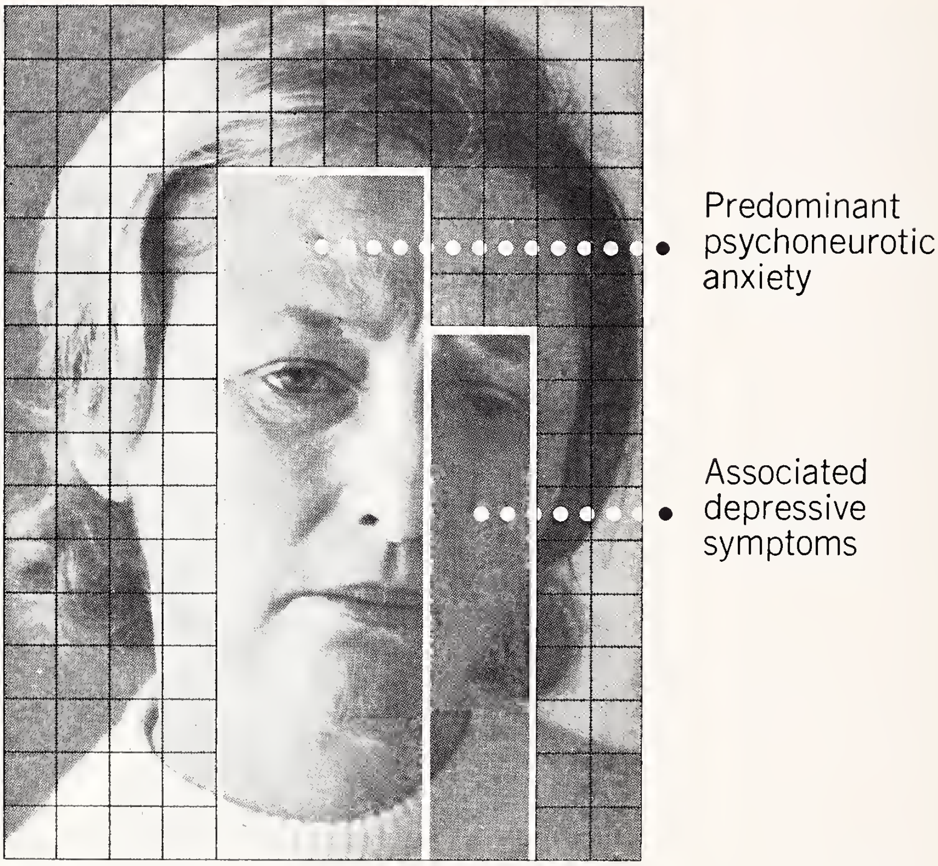
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Transport of a Burn Patient for Immersion Hydrotherapy

Paul Barash, M.D., J. Jeffery Heinrich, P.A., Patricia McRyan, R.N. and Neal Koss, M.D.

Abstract—When transportation of a critically ill patient from the protective environment of the intensive care unit becomes necessary, the particular needs of the patient along with the distance to be traveled and the new environment must all be considered in the planning for the move. The burn patient presents a unique problem in critical care management. Not only does he have multiple internal derangements which must be managed simultaneously, but also the surface injury must continue to be treated aggressively using the modern techniques which have been shown to be effective. One of these techniques is immersion hydrotherapy. A plan for the transportation and protection of the burn patient on his trip to the Hubbard tank is presented.

The modern intensive care unit (ICU) with its specially trained personnel and sophisticated equipment makes available, in a specific hospital area, the human, diagnostic and therapeutic resources to care for the critically ill. Occasionally, certain types of services are not available in the ICU and the patient has to be transported to other areas of the hospital. The following case report demonstrates the feasibility of transport of a critically ill burn patient to a remote area of the hospital where he was placed in an unusual therapeutic environment.

Report of a Case

A 36-year-old male was admitted to Yale-New Haven Hospital, having sustained a 44% body burn due to a gasoline tank explosion in an open space. Significant past medical history revealed chronic alcoholism with its sequelae: seizures and delirium tremens. Vital signs on admission to the Surgical Intensive Care Unit (SICU) were: BP 100/70 torr, P 108, T 36°C, R 18, Wt 91Kg. Significant positive physical findings were eyelid edema from a first degree burn. Second degree burns were noted covering the remainder of the face. The pharynx was normal. There were second degree burns of the forearm, with third degree burns of both hands and both lower extremities, circumferentially from the upper thighs to the ankles. On the fifth post-burn day, under general anesthesia, debridement of the lower extremities was performed and Kirschner wires were placed in the fingers of both hands to maintain interphalangeal extension. The estimated blood loss was 2500 cc. In the operating room he received 1500 cc whole blood, 5500 cc of Ringer's lactate and 100 gms of albumin. In order to accurately monitor the patient's hemodynamic status, an arterial line was placed in the left dorsalis pedis artery and a Swan-Ganz thermodilution catheter was passed via the axillary portion of the left basilic vein. (Figure 1) On the night of surgery, the vital signs were BP 170/95 torr, P 130, and pulmonary capillary wedge pressure 12 torr. Blood pressure and pulse improved with fluids and addition of narcotic for analgesia, however, his temperature rose to 101.8°F. Urine output was excellent. Respiratory support was maintained overnight via controlled ventilation.

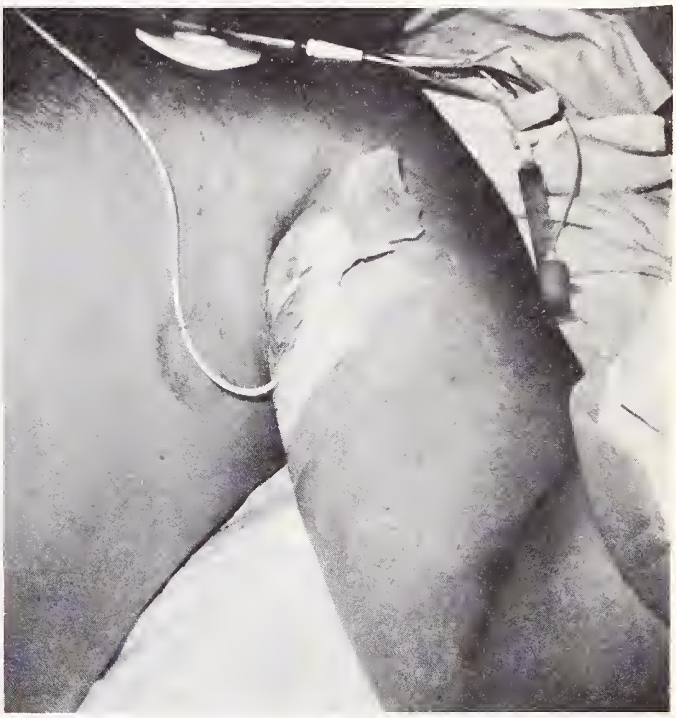

Figure 1

The Swan-Ganz catheter is in the axillary portion of the basilic vein. This allows mobility of arm and affords protection of the catheter during immersion.

At 1:00 p.m. on the first post-operative day, the patient was extubated. After stable vital signs were established for 2 hours, the patient was prepared for transit to the Hubbard Tank in the Physical Therapy Department. First, in his SICU bed, he was placed in the reverse Trendelenburg position that would be assumed in the tank. He tolerated this well. Next his arterial line and Swan-Ganz catheter were occluded with heparinized syringes. (Figure 2) During transport, his blood pressure, pulse and respiratory

---

DR. PAUL BARASH, Assistant Professor, Anesthesiology Director, Surgical Intensive Care Unit.

J. JEFFERY HEINRICH, P.A., Burn Service.

PATRICIA McRYAN, R.N., Surgical Intensive Care Unit.

DR. NEAL KOSS, Assistant Professor, Surgery (Plastic) Director, Burn Service, From the Departments of Anesthesiology and Surgery (Section of Plastic and Reconstructive Surgery) Yale University School of Medicine and Yale-New Haven Hospital.

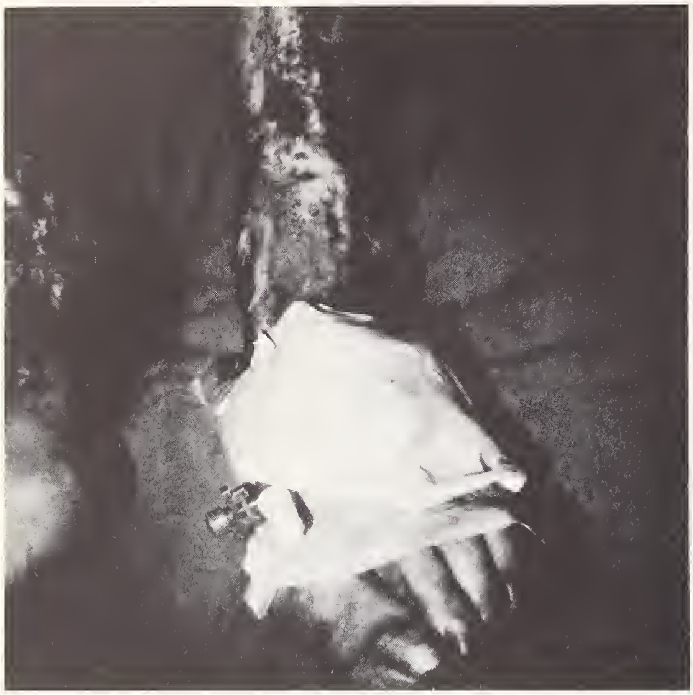

Figure 2

(A) The dorsalis pedis arterial line is protected during transport.

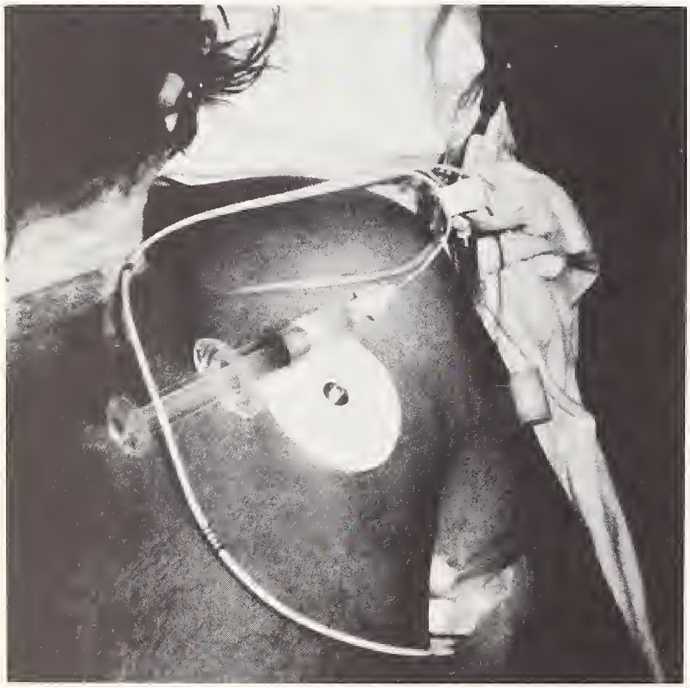

Figure 2

(B) The Swan-Ganz catheter is occluded with heparinized syringes.

rate were monitored. He was placed in the Hubbard Tank where his wounds were thoroughly cleansed and therapeutic exercises were performed. Despite the amount of activity, the vascular lines were protected. (Figure 3) Return to the SICU, where he was reconnected to his monitors, was uneventful. Blood chemistry parameters and vital signs remained constant throughout the day. Since that time the patient has made almost daily trips to the Hubbard Tank, all of which have been uneventful.

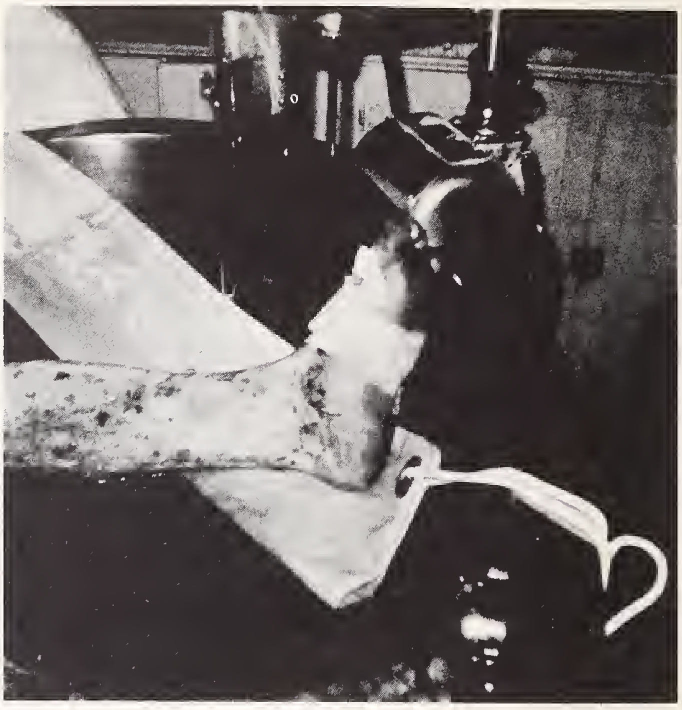

Figure 3

The arterial line during immersion is protected by dressing and elevation of foot.

Discussion

Immersion hydrotherapy in the Hubbard Tank has been a major advance for patients with severe burns. This modality allows simultaneous cleansing of the burn wound, debridement and therapeutic exercises.[1] Typically, the patient is placed in the tank once daily where thorough cleansing and debridement are performed. The use of underwater exercises also provides for patient comfort while maintaining muscle tone and preventing contractures. Any other dressing changes are done in the SICU by members of the burn team.

The transport of the critically ill patient poses multiple problems. Solutions have centered around special equipment and personnel to monitor and treat the patient en route. In this case the risk versus benefit of transport to, and immersion in the tank were considered. First, physiologic parameters monitored in the SICU showed improvement and stabilization during the first post-operative day. The extensive monitoring pre- and post- immersion could help assess the patient's reserve, and his ability to tolerate this therapeutic regimen. Further, it was reasoned that this would be first of many such treatments which were necessary to prevent wound sepsis and prepare the wounds for eventful skin graft coverage.

Extensive plans were made for resuscitation, either in transport, or in the tank itself. Resuscitation equipment accompanied the patient. A battery pack monitor is most useful in following such a patient during transport.

In summary, a patient with a 44% body burn was successfully transported through a hospital and placed in a Hubbard Tank. Utilizing the appropriate monitoring the patient's response could be assessed. The apparent safety of treatment in this situation has been discussed. By utilizing the hospital's resources, the critically ill burn patient need not be denied important treatment in an unusual environment at some distance from the intensive care unit, since the risks can be minimized by appropriate planning, monitoring and protection.

REFERENCES

1. Krizek TJ, Robson MC, Wray RC (1974): Care of the burn patient in: the management of trauma. Edited by Ballinger, W.F., Rutherford, R.R., Zuidema, G.D., Philadelphia, WB Saunders. pp 650-718.

A Review of the First 101 Total Hip Arthroplasties Performed at the Hartford Hospital

October 1971 to December 1972

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Introduction

The experience with hip replacement in this country dates back over 40 years. In 1938, Dr. Smith-Petersen,[1] after unsuccessful attempts to use numerous materials, was successful in using a cobalt-chrome alloy, Vitallium, in the form of a cup which served as an "interposition arthroplasty" between the acetabulum and the femoral head. This cup arthroplasty acted to reduce pain and increase motion in the arthritic hip joint. His work was carried on by Dr. Otto Aufranc[2] who reported the results of 1000 cup arthroplasties which were highly successful in achieving reduced pain and increased motion in selected patients.

The replacement of, rather than capping, the femoral head was proposed by Moore and Bohlman[3] in 1940. Subsequently other designs for femoral head replacement were introduced by Thompson[4] and others[5, 6, 7, 8, 9] Replacement of the femoral head proved a valuable addition to the armamentarium of hip arthroplasty in conditions where the anatomical integrity of the femoral head was compromised in extreme degrees of deformity or bone destruction with avascular necrosis. Judet[10] introduced an acrylic femoral head replacement for use with indications similar to those for the Moore, Thompson and similar designs. The Judet not only failed by excessive material wear but also faulty concepts of biomechanics lead to excessive stem strain, loosening and fracture. This design although providing some dramatic results soon gave way to the superior femoral stem designs of Moore and Thompson. A modification of a Judet design by McBride also proved a failure. Experience with newer plastic materials was advanced by Seddon and Scales[11] in 1949 and Newman and Scales in 1951. They reported on the use of polythene either as a cup arthroplasty or femoral head replacement. Excessive wear and release of particular matter led to failure in those cases. Subsequently Scales[12] used nylon for a cup design but particulate matter in the soft tissue from excessive wear characteristics of the material created severe foreign body reaction and wound breakdown.

Development of acetabular hemi-arthroplasty was advanced by Rehn[13] in 1934. He reported the use of a metal cup fixed in the redesigned bony acetabulum by a metal spike. The Urist[14] cup introduced in 1957 used three parallel spikes for fixation. Loosening and recurrence of pain proved to be a frequent complication in these cases.

Attempts at total arthroplasty of the hip were carried out by Wiles[15] in 1938. Stainless steel was used for both the femoral and acetabular components. The acetabular component was fixed with two screws and the femoral head replacement was bolted to the femoral neck. Haboush[16] replaced both surfaces of the hip joint in 1939 using an acrylic acetabulum and a vitallium femoral head. These procedures, like so many before, failed. However, subsequent studies by Haboush led to the insertion in 1951 of a vitallium to vitallium dual surface replacement using acrylic cement fixing the parts to bone. Although this was probably the first clinical experience utilizing plastic

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cement in this manner, it received only little initial attention.

Modern designs in total hip arthroplasty began in the 1950's when McKee[16, 17, 18, 19] reported on three stainless steel total hip joint insertions utilizing a femoral stem prosthesis coupled with an acetabulum component secured by heavy threaded screws. Success rates by firm fixation and marked reduction of pain were achieved in 50 percent of these earlier cases. When loosening occurred, pain recurred and these were subsequently replaced. Other independently conceived metal to metal designs were introduced by Ring,[20] Duff-Barclay, Scales and Wilson.[21]

Working in his own laboratories at Wrightington, England, Charnley introduced the concept of low friction arthroplasty. Initially he used a "press fit" acetabular component of metal but later discarded this in favor of a stainless steel femoral stem component with a teflon acetabular cup. The head size was reduced to 22 mm (normal 35 mm ±) to reduce surface contact and decrease friction. This in combination with the introduction of acrylic cement fixation of the replacement parts to bone resulted in amazing initial success. However, the teflon surface wore excessively causing foreign body reaction with tissue and this had to be discarded. The substitution of high density polyethylene for the acetabular component proved successful and although metal to metal designs with acrylic cement fixations are still being used, the effective reduction in friction of the metal on plastic has little challenge in today's literature on the subject.

Through the work of such people as John Charnley, McKee, Farrar and Ring, the field of total hip replacement was opened in Britain and Europe and made rapid strides. By the time of its introduction in the United States, British and Continental surgeons had gained ten years experience with the procedure. Many designs and variations of the original Charnley metal to plastic concept have been developed. At this time it is apparent that the operation has offered dramatic results when performed properly, that the wear characteristics of the material although finite, are acceptable and that the materials are well tolerated by the human body—except in the presence of infection.

The guidelines for the operation and the environment in which it should be performed had been set down by the British and European experience and the operation began to be performed in this country at large University or Clinic[22] centers under the aegis of the Federal Drug Administration. It was not until October 1971 that general release of the materials was allowed by the Food and Drug Administration. Much preparation had taken place to allow the Orthopedic Staff at the Hartford Hospital to introduce Total Hip Joint Replacement surgery at this point. The challenges inherent in this course were realized and were formulated as:

1. An appreciation of the biomechanics involved;
2. An understanding of the materials and their reaction in tissues, particularly under the conditions of wear and fragmentation;
3. Quality control in regard to standards of manufacturing uniformity;
4. Proper selection of patients;
5. Operative technique;
6. The complications to be anticipated during and after the operations and the development of treatment programs to avoid or minimize them.

To justify the application of these types of sophisticated orthopedic operations in the community hospital setting, it is imperative that the orthopedic surgeon fully appreciate the significance of the six foregoing guidelines. Success rates for the operation have been well established and are consistently high in most large series. It is our attempt in reviewing this brief experience to determine what the expectation for the procedure can be in the general hospital setting when the orthopedic department has made every effort to meet the criteria as outlined for success of the operation with a minimal number of complications.

Materials:

This is a retrospective study of the first 101 Total Hip Arthroplasties in 89 patients operated on between October 14, 1971 and December 21, 1972. The criteria initially developed for patient selection at Hartford Hospital included advanced osteoarthritis in older patients 60 years of age or above; advanced osteoarthritis in bilateral hip disease in patients of middle years, 40 or above; advanced stages of avascular necrosis in middle-aged patients, 40 or above; and severe, crippling hip disease caused by rheumatoid arthritis in any adult age.

There were 30 males and 59 females ranging in age from 38 to 82 years with a mean age of 60. The diagnoses were:

Osteoarthritis - 69 patients
Rheumatoid arthritis - 14 patients
Avascular necrosis - 10 patients
Failed prosthesis - 3 patients
Failed osteotomy - 2 patients
Old Slipped Capital Epiphysis - 2 patients
Traumatic arthritis - 1 patient
Old Congenital Dislocation - 1 patient
Old Hip Sepsis - 1 patient (inactive)

17 of these 89 patients had had previous surgery for their hip disease including 3 cup arthroplasties and 5 Austin-Moore prostheses.

Their major symptom causing disability was pain associated with varying degrees of limitation of motion, in all cases severe enough to seriously interfere with their activities of daily living. This was determined both subjectively and objectively by use of the Harris Hip Rating sheet.[23] The duration of symptoms ranged from 1 to 40 years with most over 5 years.

All patients who had not been seen at least one year postoperatively or whose follow-up did not include adequate postoperative x-rays were excluded from the study, this left 84 patients who had been followed for a least one year postoperatively. Five patients were not included in this study for the following reasons:

3 - lost to follow-up before one year.
1 - death at 10 months (not related to operation).
1 - death postoperatively.

Methods:

A thorough review of the literature of total hip surgery was done. Visits were made to various centers in the United States as well as to Mr. John Charnley's Laboratory at the Center for Hip Surgery at Wrightington, England, to observe his operation.

After this, a protocol was developed for the preoperative and postoperative care. The device initially selected was the Charnley prosthesis. More recently we have also used the T-28 prosthetic design.

In order to help insure a high degree of success, it was agreed by the orthopedic staff to have the operation performed only by those surgeons most familiar with it. Also by limiting the number of surgeons performing the operation, a higher rate of exposure to the procedure was insured with rapidly accumulated and sustained skills. As a result all the first 101 procedures were performed by three surgeons with at least one other attending surgeon and one or more resident assistants.

The operative technique of Charnley[24, 25] was duplicated with one major exception—the patient is placed in the lateral position for surgical approach to the hip joint rather than the supine position. The greater trochanter was osteotomized in each case to allow a more complete exposure of the hip joint and was wired back, usually in advanced position, at the end of the procedure. Complications potentially were numerous, as in all major operative procedures in the elderly. The insertion of significant quantities of foreign material in addition, exposed the patient to increased biological as well as mechanical hazards.

Infection being the greatest hazard to a satisfactory outcome, Charnley and Eftekar[26, 27] devised a specially air-conditioned, glass-enclosed operating cubicle and suction face masks to create a virtually bacteria-free environment. This in combination with gowns designed to avoid moisture penetration resulted in an early postop infection rate of less than 1 percent. Another approach which proved equally successful at the Mayo Clinic, was to use a standard operating room environment with the addition of prophylactic antibiotic coverage during the operative experience beginning preoperatively and for a short period postoperatively. A program similar to the Mayo Clinic design[28] was developed in conjunction with the Infectious Disease Service at the Hartford Hospital. There is still considerable debate among infectious disease specialists as to the value of prophylactic antibiotic therapy in surgical procedures. The application of antibiotic prophylaxis in this kind of surgery is based on the rationale that one can predict the likely pathogens to a high degree of certainty and that these particular pathogens can be significantly reduced by a specific antibiotic.[29, 30] Infections in the presence of a foreign body insertion have been about 90 percent due to coagulase negative, staphylococcus epidermis or coagulase positive, staphylococcus aureus. Cephalosporin antiobiotics are usually active against all types of staphylococci and for this reason cephalosporin antibiotics have been used in our series. Synthetic penicillins such as oxacillin and methicillin are ineffective against 15 to 20 percent of coagulase negative staphylococci and therefore seem less desirable as a prophylactic agent under these conditions.

With the help of the Infectious Disease Service outlining a plan, Keflin was given in doses of 1 gram IV 1 hour preoperatively, 2 grams IV during surgery and 2 grams at 4 hour intervals postoperatively for three days. Neomycin solution 1 percent was used routinely as irrigation during surgery and double large bore sterile tube suction was used for the first 24 hours postoperatively to eliminate hematoma formation and dead space.[31]

Rigid rules to eliminate traffic into and within the operating room during the procedure and only operating as the first case of the day were in force in this case series. Waterproof OR dress and pantsuits were used for all personnel. Double gloving, paper filter masking and special hoods for total hair coverage were also used routinely.

The other most frequently encountered complication following major hip joint reconstruction is thrombophlebitis and pulmonary embolism. In 58 untreated patients following total hip replacement Coventry and Associates[32] recorded two fatal and one minor pulmonary embolism. In another series, Rothermel, Wessinger and Stinchfield[33] reported 4 pulmonary emboli in 60 untreated patients after total hip replacement. Harris[34] found that no pulmonary emboli fatal or non-fatal occurred in 106 patients given either prophylactic coumadin or aspirin. Accordingly, patients in this series were given prophylactic coumadin beginning on the 4th postoperative day. Attempts were made to maintain the prothrombin time between 20 and 40 percent of normal.[35] Medical consultation was used pre and postoperatively to anticipate and deal with major medical problems.

Careful preoperative counselling by nursing and physical therapy personnel proved to be a great assistance in giving the patient a clearer understanding of the operation and its expectations.

Results:

1. Method of evaluation—information in regard to progress in follow-up was taken from hospital records and later office charts, with particular concern for degree of pain relief and ability to perform normal activities of daily living. Initial postoperative x-rays were performed in every case to check the position of the components and the integrity of the wires holding the greater trochanter. X-rays were then taken at intervals dictated by the physician's discretion and patient's symptoms. All 84 patients were examined at least 1 year postop and in many cases up to 4 years postop. Success was determined by the total absence of or only occasional mild pain, minimal or no limp, and need for only minimal support such as a cane, the latter being occasionally maintained by older patients particularly when both hips were operated.

   Using this criteria for evaluation, ninety-one of ninety-six hips in seventy-nine of eighty-four patients rated good or excellent. In addition, the patient's subjective responses concerning pain relief and functional activity level after their operations, when recorded, were almost uniformly enthusiastic. There were three patients whose results at last follow-up were felt to be less than satisfactory but who had regained independent ambulatory status. (One 78-year-old patient still exhibited a severe limp which although related to disease in her opposite hip, seriously compromised her gait. Another patient who had nonunion of the trochanter and fracture of the wires holding it on x-ray at 1 year, had intermittent moderate bursitis for 2 years and although she was happy with the result of her surgery and rated it herself as satisfactory, we were unable to do so. The third patient, a 62-year-old man who had removal of cup arthroplasties and insertion of total hips bilaterally had only a fair result due to continued moderate postoperative pain and the fact that he was the only patient in the series who required use of a walker. He, too, was quite happy with his result.)

   Major complications were one death and two failures in the series of 89 patients.

1. *Early*

a. 1 death. This occurred 3 hours postoperatively in a 75-year-old man in previous good health who became hypotensive under anesthesia and died 3 hours postoperatively of a massive fat embolism.

b. Dislocation. A 54-year-old man who had had an Austin-Moore prosthesis and had required multiple placements of both the femoral and acetabular components intra-operatively, dislocated in the Recovery Room in the immediate postop period and again 2 days later requiring spica cast. A surgical revision of this arthroplasty was necessary at a later date.

2. *Late*

a. Infection. The only infection in the series occurred in a 66-year-old male with osteoarthritis who 1 year after total hip arthroplasty developed signs of infection in the total hip and 23 months postoperatively had removal of the prostheses and conversion to a Girdlestone with eventual clearing of the infection. This developed after a urinary tract infection and was interpreted to have resulted from hematogenous spread from the urinary tract.[36]

All other complications were considered to be minor if there was no or minimal interference with the patient's general health as a result of the operation.

1. *Early*

a. Nerve palsies
   1. Femoral, minor - 1
   2. Peroneal palsies - 3, all recovered.

b. Thrombophlebitis. Thrombophlebitis was evaluated on a clinical basis only. 3 cases of deep vein thrombophlebitis were diagnosed which lengthened the patients' hospital stay. 2 minor pulmonary emboli occurred both in the first 2 weeks postop and resolved on coumadin anticoagulation which had already been instituted in each case according to protocol. There were no fatal pulmonary emboli and no complications as a result of anti-coagulation therapy.

c. Heterotopic bone was present in 28 of 55 patients x-rayed at 1 year postop. There were 19 males and 9 females and the amount of bone formed was moderate or severe in 18 patients. The usual location was lateral superior. There was no correlation between presence or amount of bone formed and functional result, which is in agreement with the results of Brooker et al.[37]

d. Fractures of fixation-wires and loss of position of the greater trochanter postoperatively. At 1 year, 23 out of 55 patients had their trochanters united as placed with intact wires on x-ray. The remaining 32 patients had the greater trochanter ununited or the wires had broken or both. However, only 5 patients complained of occasional pain in the trochanteric area or developed mild bursal inflammation over the greater trochanter. There appeared to be correlation between advancement of the trochanter distally and later nonunion of the trochanter or breakage of the wires.

Although none of the results from Total Hip Arthroplasty were seriously compromised in any of these cases by this high incidence of wire failure and trochanter osteotomy nonunion, it is now our practice in most instances, not to osteotomize the greater trochanter.

Conclusion

101 case studies of Total Hip Arthroplasty of the Charnley type were reviewed. There were 84 patients with adequate follow-up at 1 year. 79 of the 84 patients were considered good or excellent (91 of 96 hips) results. There was one postoperative death in the series. There were two failures, one due to chronic joint instability and dislocation requiring reoperation and one late infection secondary to urinary tract disease requiring removal of the components. There were 3 poor results already described.

This brief experience of 101 hips supports the concept that this is an appropriate procedure for the large or medium-sized community hospital with proper control and adequate forethought. The surgery itself though technically demanding does provide consistently good results for the great majority of patients as judged by their almost universal satisfaction with results of the procedure. With the use of a comprehensive protocol, complications can be kept to a minimum and when treated appropriately, total failure of the procedure is infrequent.

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An Ambulatory Surgical Service by Norwalk Hospital Department of Surgery

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Abstract—In summary, there has not been a significant decrease in occupancy in the hospital as it has still been running over 95 percent since the beginning of the program. However, during this period of time the waiting period for elective patients has decreased markedly to a time of zero to one or two weeks. There has been significant savings to the patient and third party payors of $139,409 during the year of 1973, while at the same time there has not been any significant lack of insurance coverage by third party payment.

When we move into the new area, there will be at least a 20 percent decrease in the number of cases done in the Operating Room Suite, thereby giving us more time and space to devote to larger and more complicated procedures, and to institute new programs.

General Considerations

As noted in an article published in the Annals of Surgery in 1972,[1] health care at that time was the third largest industry in the United States and by 1975, it was expected to be the largest. Considering this factor and since the Norwalk Hospital had been besieged by an occupancy problem for fifteen years, a formal ambulatory surgery service was instituted in November of 1972 for the patients' benefit.

The high occupancy level evidenced itself in two fashions: in having 95-100 per cent occupancy, and in creating a 4 to 6-week wait before elective operative patients could be admitted to the hospital.

Ambulatory surgery is certainly not a new concept since it has been done in almost every hospital in one form or another and certainly the experience in the Phoenix Surgicenter[2] has been successful and unique. However, this ambulatory surgical program was embarked on carefully, with a great effort to maintain records of costs compared with the costs of previously admitted patients with the same diagnoses, and the percentage of ambulatory cases compared with regular operating room cases.

In commencing this program we attempted to create another avenue of health care that would meet the needs of our community.

A 1972 Connecticut State Department of Health survey[3] reported that of 36 hospitals in the State of Connecticut, only 5 were reported as requiring extra beds. Norwalk Hospital had the greatest need with the survey indicating 38 extra beds were needed.

Objectives

Our objectives were then solidified and this Ambulatory Surgical Service was provided to:

1) Improve the utilization of beds.
2) Free operating rooms for inpatient use.
3) Lessen the cost to the patient.
4) Reduce the waiting time for elective surgical cases.
5) Improve patient care.

Overview of the Program

Geographic determination of the location of this 5- and later 7-bed unit was difficult. There was a possibility of utilizing the Ob/Gyn beds. However, the Public Health Laws were so restrictive that this could not be implemented. Epidemiological reasons, traffic flow, and inpatient disruption were all important factors in eliminating this area.

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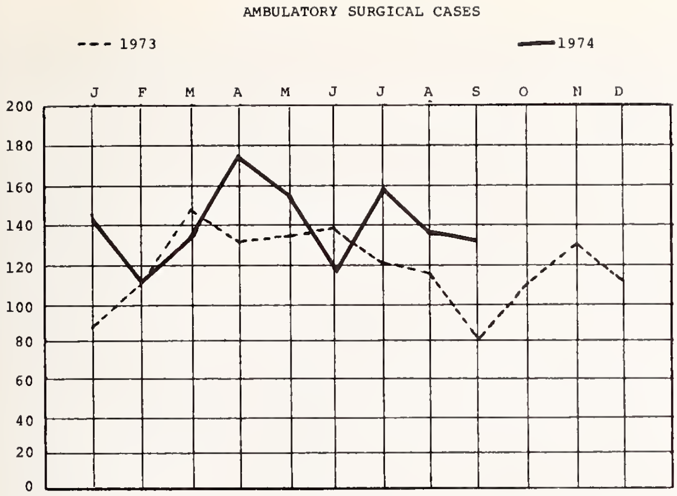

Exhibit 1

In any one month's time there has never been less than 80 cases. The sharp variation in utilization of this program is probably related to its newness, the availability of the surgeons, and the needs of the patients.

Space on the pediatric floor, where the beds were less in demand, was finally chosen. The fact that this was in a less busy traffic-flow area and that there would be no disruption of ordinary patient care were factors which were helpful in making this decision. This unit was open for use from 8 o'clock in the morning until 4 o'clock in the afternoon. In addition, we were able to use three Emergency Room beds from 8 in the morning until noontime. The choice of which of these two areas was to be used was a function of the operating surgeon dictated by the patient's needs, advantages and disadvantages, and the type of anesthesia which was to be used.

This obviously separated the patients into two main groups. The group scheduled for surgery in the Ambulatory Surgical Program beds in the Emergency Room were met there by their surgeons, their various procedures were done utilizing local anesthesia, and later they returned home. The other group of patients was placed in the 7-bed unit, prepared for surgery, taken to the main Operating Rooms and given general anesthesia, or in a few cases local anesthesia. Their procedures were performed and they had properly supervised recovery from the anesthetic; they were ambulated, and given nourishment prior to their leaving the hospital. Therefore, the patients who rotated through the Operating Room utilized our regular operating room space and recovery room space, just as any other patient.

This service was particularly liked by mothers whose infants or very young children were being operated on. They were able to stay close by and be with their children while they awoke and were able then to take them home.

Personnel

For this special ambulatory service, a regular staff nurse and a licensed practical nurse were required to perform the nursing care in the 7-bed unit area. The other additional person required was an operating room nurse, who would proceed to the Emergency Room with all the necessary equipment, set up and actually assist with the procedures. Special charts were used. There was a careful cost analysis kept of all the supplies expended, the Emergency Room usage, and the Operating Room usage.

General Policies

It was required that a history and physical be performed and the indicated laboratory work and consultations done the day prior to the operative procedure. This was adhered to by most of the surgeons but for those who were slower to accept the concepts of the new plan, the Laboratory arranged for the laboratory work to be performed at 7:30 on the morning of the operation in a separate room near the Admitting Office.

This program placed the responsibility with the surgeons for the decision as to whether the patient should enter the ambulatory care program. Conversely, during monthly reviews and audits, the surgeons were reproved if nonadherence to the policies was determined or if their judgment was questionable concerning the suitability of the case for the ambulatory program.

The patients were checked at 8:15 in the morning by the anesthesiologist before the operation; they were checked again by the anesthesiologist before they left the Recovery Room; and they were also examined by the surgeon prior to their discharge from the unit.

Since the statistics for these patients have not been incorporated in determining the average length of stay of surgical patients, this figure has risen for the hospital. These statistics should be included in some manner to truly reflect the picture of length of stay for the surgical patient.

A Cooperative Effort

Various services in the Hospital contributed to the success of this program. For instance, the Admitting Office expedited their work by contacting the patient the night before and obtaining all the necessary biographical admitting data; the Record Office complied by decreasing the paper work to a minimum and supplying a special form which contained all the necessary information and at the same time was acceptable to the Joint Commission on Accreditation of Hospitals. The Finance Department complied by keeping case records on costs and substantially decreasing the costs of the Operating Room, Emergency Room, Recovery Room, and the bed space on the

7-bed unit. The managerial portion of the Hospital contributed immensely by coordinating all of these activities.

First Full Year of Operation

During the first year, 1423 cases were admitted under the ambulatory plan. 594 were performed in the Emergency Room and 829 in the Operating Room. The monthly breakdown is reflected in the following chart:

NUMBER OF CASES PER MONTH - 1973

	Emergency Room	*Operating Room*	*Total*
January	48	37	85
February	41	68	109
March	59	88	147
April	54	79	133
May	62	74	136
June	63	76	139
July	61	60	121
August	57	61	118
September	24	57	81
October	41	69	110
November	45	86	131
December	39	74	113
Total	594	829	1423

Following is a list of the types of cases performed, together with the frequency of the procedure. The ten most frequently performed procedures represented 1116 of the 1423 cases in 1973, of 78.4 per cent.

Excision benign lesion skin and subcutaneous tissue (any site except breast)	408
Myringotomy (with/without tubes)	240
Cystoscopy	196
Dental extractions/impactions	55
Removal chalazion	52
Excision benign breast lesion	49
Removal cast	37
Spinal tap (with/without Depo-Medrol)	30
Laryngoscopy	25
Ganglionectomy	24
	1116

The next ten most frequent procedures accounted for 152 cases, or 10.7 per cent of the total:

Revision of scar	19
Esophageal dilatation	15
Herniorrhaphy (inguinal/umbilical)	15
Removal fixation devices	14
Excision ingrown toenail	13
Removal foreign body	13
Vasectomy	12
Excision basal cell carcinoma	12
Nerve block	11
Circumcision	10
Application cast	9
Release carpal tunnel syndrome	9
	152

The remaining 155 cases, 10.9 per cent, included the following procedures:

Dental Procedures

- Dental graft
- Excision lingual frenulum
- Gingival autograft
- Restoration carious teeth (with/without caps)

E.N.T. Procedures

- Amputation uvula
- Excision tumor auditory canal
- Excision tumor of nose
- Polypectomy, nasal
- Polypectomy, vocal cord
- Reduction fracture nasal bones
- Tympanotomy

General Surgery Procedures

- A-V fistula
- Arterial thrombectomy (with revision shunt)
- Biopsy lymph node
- Biopsy muscle
- Bone marrow aspiration
- Excision
  - birthmark
  - calculus (submandibular)
  - hematoma (hip)
  - lymph node
  - multiple subcutaneous metastases
  - tattoo
  - tumor, inguinal
  - tumor, palm of hand
- Fistulectomy
- I&D abscess
- I&D infected pilonidal cyst
- Ligation and stripping of varicose veins
- Lysis adhesions of back
- Paracentesis
- Polypectomy
  - anal
  - rectal
  - sigmoid
- Removal A-V shunt

Ophthalmological Procedures

- Biopsy conjunctiva
- Correction entropion
- Examination under anesthesia
- Excision pterygium
- Exploration lacrimal duct
- Inversion punctum eyelid
- Lysis adhesions O.S.

Orthopedic Procedures

- Aspiration synovial fluid
- Excision bursa
- Excision tumor of knee
- Fusion of finger
- Lengthening of tendon
- Manipulation joint
  - knee
  - shoulder
  - wrist
- Osteoplasty
- Reinforce cast
- Release trigger finger
- Removal bone spur
- Resection bone
- Secondary closure of wound (laminectomy)
- Tenorrhaphy

Genitourinary Procedures

- Aspiration hydrocele
- Cystogram
- I.V.P.
- Meatotomy
- Repair hydrocele
- Urethral calibration
- Urethral dilatation

Plastic Procedures

- Blepharoplasty
- Dermabrasion
- Release of pedicle flap
- Repair of earlobe
- Skin grafting

Gynecological Procedures

- Biopsy vaginal ulcer
- Check position I.U.D.
- D&C (with cauterization)
- Excision Bartholin cyst
- Hysterosalpingogram

Thoracic Procedures

- Bronchoscopy
- Esophagoscopy
- Thoracentesis

Of the 1423 patients, only three required admission to the Hospital. One patient did not recover adequately from the anesthetic; a second patient's procedure was more extensive than had been planned originally; and the laboratory work on a third patient revealed glycosuria and he was kept for additional diabetic

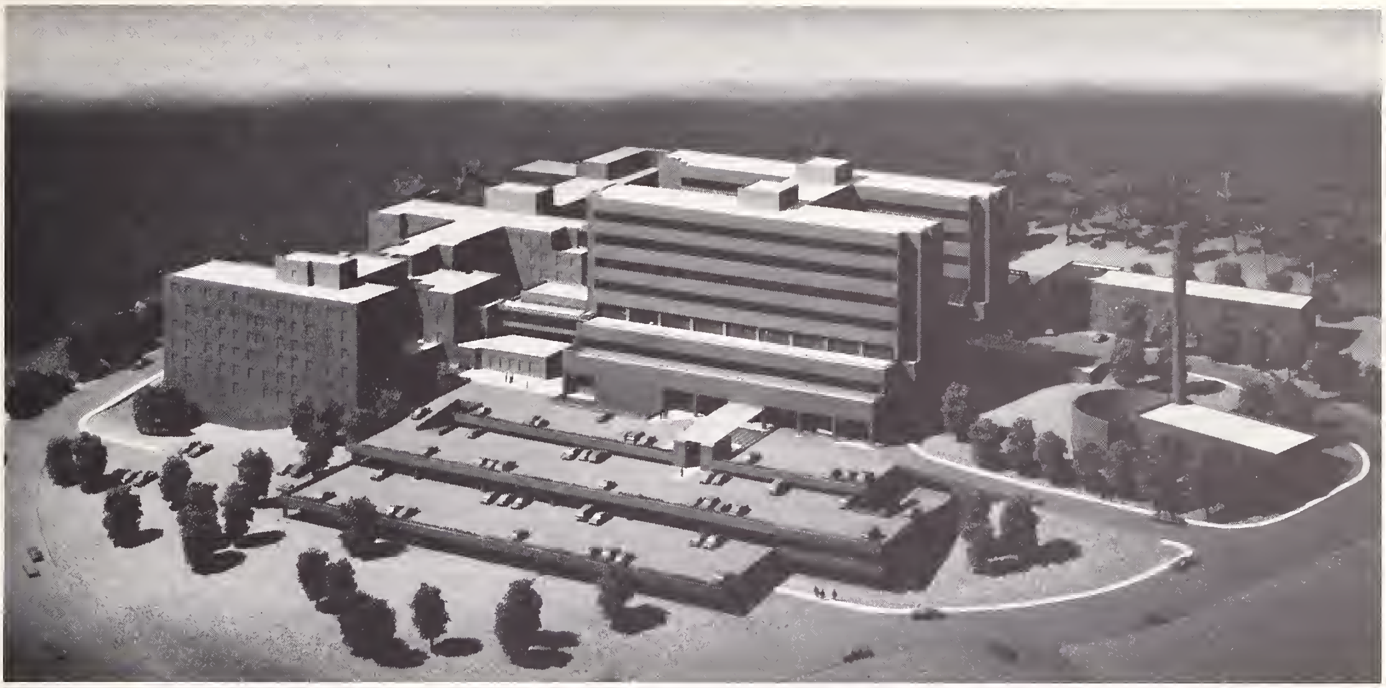

Figure 1

Overall view of Norwalk Hospital showing the new Ambulatory Care Center, with the older structure to the left.

work-up. All of these patients were discharged on the day following their procedures.

There has been no mortality nor significant morbidity that we could determine.

Of the 7952 operative procedures performed in 1973, the 1423 ambulatory cases constituted 17.86 per cent. For the first nine months of 1974 there have been 1262 ambulatory procedures out of a total of 6177, or 20.4 per cent, reflecting a continuing increase in the usage of this type admission.

Acceptance of the Program

There has been good acceptance by the Hospital, the surgeons, the operating room nurses, and an excellent patient response. The Public Relations Department submitted a questionnaire to each patient after his return home, an example of which is shown here. Of the 916 responses received from the 1423 patients, the results were as follows:

	Yes
1) Were all arrangements handled satisfactorily?	96.5%
2) Did you receive adequate information from your physician?	97.3%
3) Did the Hospital Staff respond to your needs courteously and efficiently?	99.3%
4) Do you feel that the introduction of Ambulatory Surgical Service at Norwalk Hospital is a good idea which benefits patients?	99.1%

Costs

For the year 1973 the savings to the patients, or third party payors, amounted to $139,409, or 48 per cent of the charges which would have been incurred for similar cases treated under the previous inpatient system. There was no bona fide lack of payment by a third party.

Future Plans

In the future, and the construction work has already begun, there will be a 27-million dollar addition to the Norwalk Hospital which will improve our ambulatory care in general, and will provide many new ancillary services, as well as 120 new beds. Because of our experience with the ambulatory surgical program, we have taken a very positive attitude in planning a small section for the Ambulatory Surgical Service which will consist of four beds for use with patients

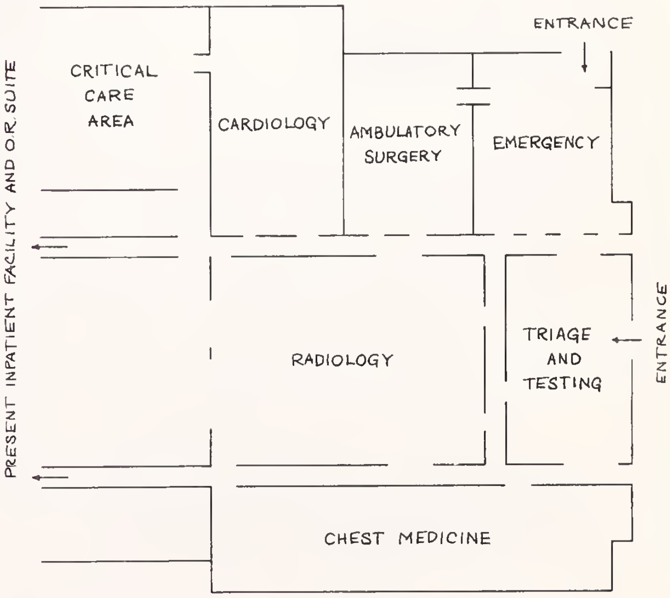

Figure 2

The new Ambulatory Surgical Suite with room detail.

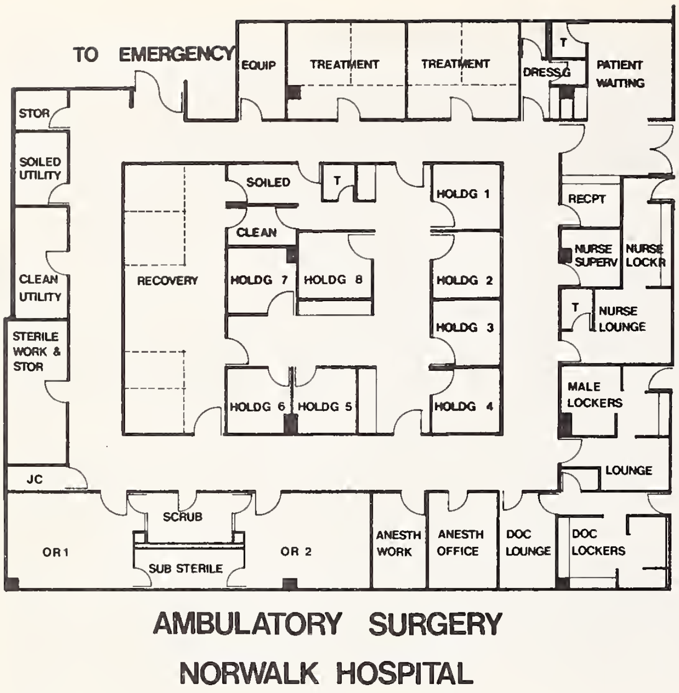

Figure 3

The new Ambulatory Surgical Suite and its relation to supportive services.

having local anesthesia, eight holding beds, two operating rooms, and a four-bed recovery room. This has been incorporated in such a manner on the third floor, and the grading of the site is such that a patient may enter at one end, have the necessary laboratory work performed, continue on to the ambulatory operating room area where the surgical procedure can be performed, then to the recovery area, and leave the hospital. However, with respect to traffic flow and its relationship to important supportive services such as the emergency room, radiology, cardiology, critical care area, and the main operating rooms, as demonstrated on the slide, one can see its careful integration into the health care facility. It is adjacent to the emergency room so that it is readily available during a disaster or a sudden influx of injured patients.

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ACKNOWLEDGMENT

Appreciation is expressed to Helen S. Broadhurst, A.R.T., Administrative Assistant for the Department of Surgery at Norwalk Hospital, for her work in compiling the statistics and assembling the data for this presentation.

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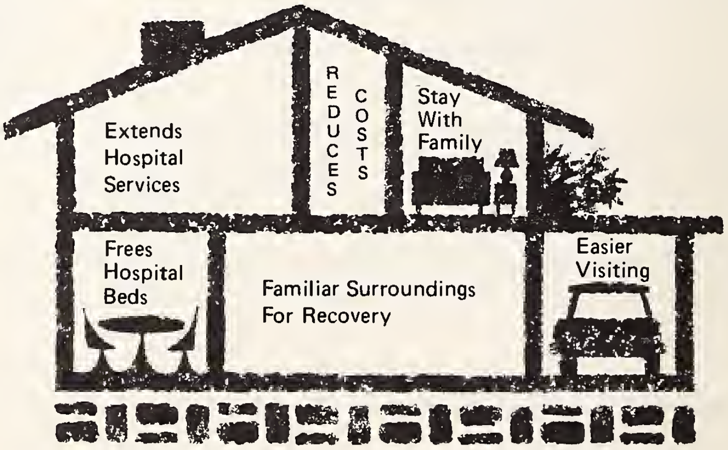

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Blue Cross of Connecticut
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Phone: 239-4911

The Pacemaker Follow-Up Clinic
A Three Year Experience

Robert J. Dobrow, M.D. and Arnold Fieldman, M.D.

Synopsis

The Hartford Hospital Pacemaker Clinic has followed 353 pacemakers in patients registering in its clinic from September 1972 to October 1975. This three year experience encompasses surveillance of 24 different types of pacemaker models. Only 11 of 353 pacemakers were lost to follow-up, mostly by virtue of transfer of the patients out of the state. Two-hundred-sixty-eight pacemakers have been followed for periods of time less than 2 years in the clinic, and another 95 pacemakers have been followed for 25-39 months since implantation, providing a substantial overview of the performance of many pacemaker models.

Pulse generators are followed in the clinic to provide maximum service life consistent with patient safety. The majority of pacemakers are followed until early signs of battery depletion are detected before a recommendation for replacement of the pacemaker pulse generator is made. Twenty-eight per cent of all pacemakers followed in the clinic have already attained an implant age exceeding the manufacturer's recommended early elective replacement date by 1-14 months. During the 3 years of clinic surveillance, 138 pulse generators terminated service. There were 90 elective replacements recommended by the clinic as compared with 16 emergency replacements in 342 pulse generators followed. Thus, 4.7% of pacemakers followed required emergency replacement for problems not predicted or detected at routine clinic visits. Five of these were classed as "acute" battery failure, and 11 as acute systems failure excluding battery failure. The latter category appears to occur at random, whereas battery failures are of course more frequent with advancing age of the pacemaker. In no instance was it determined that a failed pacemaker unit resulted in the demise of the patient.

Considerable care is taken in determining the dependence of the patient upon the paced rhythm in deciding upon clinic recommendation for extending the life of the pacemaker in lieu of recommending replacement.

Recognition of early battery failure was made at routine clinic visits in 87.2% of battery depletions, and was made by the patient or his private physician in 12.8% of battery depletions.

The clinic is considered an essential part of follow-up of implanted pacemakers and provides sufficient safety for patients while extending the service life of these units, thus reducing the long term economic burden of recurring pacemaker replacements and the attendant risks of operative complications and morbidity.

A pacemaker follow-up clinic was established at Hartford Hospital in September 1972 to provide a registry and routinized follow-up for patients with permanent implanted electronic cardiac pacemakers. The clinic accrues patients by referral from surgeons implanting pacemakers and by referral of patients by private physicians in the community. This report of three years experience will describe the clinic and the results of follow-up of 260 patients and 353 initial or replacement pacemaker devices in the period September 1, 1972 through September 15, 1975.

Purpose of the Pacemaker Clinic

In 1972, many available pacemakers had an expected battery life of about 2-2½ years. Manufacturers recommended elective replacement of many pulse generators at 24 months unless the patient was to be followed closely thereafter. In the pacemaker clinic, pulse generators are tested for warnings of impending failure or battery depletion. Manufacturers recommendations for "elective replacement" vary for each model of pacemaker, and have been extended for some models in the past 2 years. However, all such recommendations are conservative, aimed at minimizing pacemaker failures in units not followed in a clinic situation. These "end of life" characteristics consist of rate decrease, and change of pulse amplitude, duration, and, in some cases, pulse contour. Rate can be measured with an office electrocardiograph, but is most accurately obtained with an electronic counter. Pacemaker pulse amplitude, duration and contour analysis require the use of amplification equipment with an oscilloscope. These functions are best evaluated in a "clinic" which avoids needless costs in duplication of monitoring and equipment. In the clinic, other tests such as evaluation of sensing function and senso-

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ry refractory period of demand (synchronous) pacemakers can be performed, providing a more complete study of pacemaker performance. Periodic testing of this type is performed at intervals, at least monthly once the manufacturer's "elective replacement date" is near, permitting many more months of useful pacing before the recommendation of replacement of the pulse generator. Recommendations for replacement are most often made when some sign of battery depletion is observed. Hypermaturity of the unit alone may dictate a change, particularly if the patient is pacemaker dependent, and, as in many earlier units, the indicators of battery depletion are less dependable. When detected, pulse generator component or lead system failure likewise may be an indication for replacement or correction. Most patients requiring pacing for heart block or bradyarrhythmia return to a satisfactory intrinsic rhythm following start of permanent pacing, so that only a very few are at risk of developing asystole or significant cerebral ischemia immediately after a pacemaker failure. It seems prudent to extend pacemaker implant time under clinic surveillance for this reason.

Patient Registry

A file is maintained containing the record of each patient's pulse generator. The reason for the original implantation is given. The performance of the pulse generator at each clinic visit is recorded. The files are available 24 hours a day, 7 days a week, should the information be required as a result of either elective or emergency admission to the hospital.

Staff Education

Cardiac Fellows rotating through the clinic service and staff cardiologists have the opportunity to acquire broad experience in pacemaker evaluation and follow-up. In addition, the clinic provides a centralized "library" receiving manufacturer's reports and newsletters reviewing characteristics of their pacemakers and specifications of newer units. With over 50 models in common use, this is a necessity for adequate patient care.

Method

Clinic Schedule

Patients with newly implanted pulse generators are seen at the following intervals after implantation: 1 month, 6 months, 12 months, 15 months, 18 months, 21 months, 23 months, then monthly until end of service life of the unit.

Patients first referred to the clinic after their pulse generator has been implanted for some months are seen within 1-2 weeks of referral for evaluation and then enter the above schedule.

Testing at Each Visit

Evaluation of Ability to Pace

A 12 lead ECG and long lead 2 rhythm strip is obtained. Pacer rate is obtained on an electronic counter. Demand "synchronous" pacemakers contain a magnetic reed switch to covert them to fixed rate pacing. In the clinic, an external magnet is applied over the chest wall contiguous to the implanted pulse generator and rate is counted electronically in this "magnetic mode." Synchronous (demand) pacemakers may have rate measured without a magnet, if consistent pacing is observed as when the patient's intrinsic rate is below the pacemaker rate. Asynchronous (fixed rate) pacemakers do not require magnetic activation antecedent to rate counting.

Ability of pacemaker pulses to cause ventricular depolarization faithfully is assessed also by observation of the electro cardiogram. When each pacemaker pulse produces a QRS, this is reported as consistent ventricular "capture," or a "1:1 response." Failure to "capture" consistently can be due to a variety of pacemaker system problems requiring further investigation. These include battery depletion, plus generator component failure, myocardial factors, and a variety of lead system malfunctions.

Pacemaker Pulse Analysis

Pulses are visualized on an oscilloscope after amplification. With bipolar pacemakers, the pulses noted in standard limb leads I, II, and III are projected and photographed. Pulses of unipolar pacemakers are visualized by amplification of a modified lead II, with the right arm electrode placed directly over the pulse generator. Pulse amplitude, duration, and contour are thus evaluated.

Evaluation of Sensing Function

Observations of the 12 lead ECG and rhythm strip provide clear evidence of intact sensing and suppression in many instances provided an intrinsic rhythm is present with a rate which at least occasionally exceeds the pacemaker rate. Extrasystoles provide another test of pacemaker sensing function, but this cannot be equated to the usual intrinsic QRS. Further evaluation employs an external pulse generator applied to the chest wall via two suction cup electrodes. The external rate is advanced until it exceeds the rate of the internal pacemaker. Suppression of the internal pacemaker occurs if sensing function is intact. Particularly in the case of bipolar systems, failure to suppress in this fashion may be due to improper electrode placement. However, after some experience, this should not be a problem, and we have not failed to suppress a single pacemaker in this fashion after the trial and error of multiple placement. The underlying patient rhythm is thus unmasked. Monitoring is constant, and care is taken to avoid prolonged asystole.

Suppression is terminated if an asystolic interval is observed exceeding 2 seconds. The test is also aborted instantly if dizziness, paresthesia, or other symptoms occur, or if ventricular arrhythmia is observed. Suppression is done routinely in our clinic when a patient with a "demand" unit does not exhibit his intrinsic rhythm without this maneuver. Suppression may be performed for longer than 2 seconds when an adequate intrinsic rate is observed. Sometimes, short term suppression will expose an unpaced QRS for evaluation of inherent sensing function.

Programmable Pacemakers

Pacing threshold can be evaluated after implantation in the newer "programmable" pacemakers (Medtronic 5961, 5931, and Cordis Omnicor series). This is usually performed two to three months after implantation to allow for maximum threshold development. An external "programmer" is applied to the chest wall close to the internal pulse generator and the energy output of the internal unit is lowered or raised to determine pacing threshold. This is accomplished in the Medtronic 5961 and 5931 by an infinitely variable pulse width between 0.15 msec. and 1.7 msec., and in the Omnicor series by a stepwise alteration of current limitation for 2.3 ma. to 9 ma. The output of the internal unit is then programmed to the lowest level providing consistent pacing, then a higher energy output is programmed to allow a safety margin. This is done under total oscilloscopic control, with documentation of all steps. The Omnicor series also has "programmable" stepwise change in rate.

The purpose of this manipulation is to conserve battery life and thus prolong the service life of the pulse generator. It is anticipated that many of these units will last 3-4 years or perhaps longer on low threshold patients. It is our opinion that programming must always be performed under oscilloscopic control.

Test Summary and Recommendations

All tests performed at a clinic visit by clinic technicians and/or cardiac fellows are reviewed with an attending cardiologist and a conclusion as to pacer function and any recommendations for extension of service life or replacement is made. A report of each visit (Figure 1) is mailed to the referring physician, and to the surgeon involved in the case. Essential to proper patient care is a system of compulsive follow-up. Patients who miss visits will be "bird-dogged" to the point of sending out the police if necessary. Once a patient enters our pacemaker follow-up service, he or she becomes our responsibility. In only a few cases, we have recommended elective replacement at manufacturer's suggested post-implantation time, because of uncertain follow-up expectation. Even in these situations, we assume the responsibility for pacemaker reimplantation.

Results

Two-hundred-sixty pacemaker patients were seen in our clinic during our first three years. Three-hundred-fifty-six pulse generators were evaluated. One-hundred-thirty-eight patients had termination of service of their pulse generators during the follow-up period. The reasons for termination of service of pulse generators fall into three broad categories.

I. *Elective Replacement*

  A. *Battery Failure* - Evidence of battery depletion detected at a routine scheduled clinic visit was a major indication for recommending elective (urgent) replacement.

  B. *Systems Failure* - Evidence of systems failure determined at a routine clinic visit (patient asymptomatic) other than battery depletion included pulse generator component failure, wire fracture, wire insulation fracture, displacement of wire, extrusion of pulse generator through the skin, infection, elevated myocardial threshold with failure to capture, and sensing malfunction. All were cause for elective (urgent) replacement or operative adjustment.

  C. *Based on Maturity of Unit* - Some units were replaced electively based on the maturity of the unit but without signs of systems or battery failure. In most instances, those decisions were made after the unit had been in service 1-6 months longer than the manufacturer's replacement time recommendation. In a few cases, the attending physicians chose to replace units at or before the manufacturer's recommended replacement time. The underlying spontaneous patient rhythm was usually a strong factor in the decision as were the presenting rhythm and complaints which first were indications for pacemaker implantation.

II. *Emergency Replacement*

Emergency replacement was performed for symptomatic patients with pacemaker failure due to acute battery depletion, or acute systems failure, not predicted or initially detected at scheduled clinic evaluation.

III. *Death of Patient*

Inquiry was pursued into the circumstances of the death to determine whether death could have been related to pacemaker cause.

The clinic experience September 1972 to October 1975 is summarized for each pacemaker model in Table 1. Twenty-four different model types were represented in the 353 pacemakers registered. Clinic

HARTFORD HOSPITAL PACEMAKER CLINIC

Name: J.M. Age: 77

Pacemaker Type: Cordis Omni-Stanicor

Pacemaker Clinic Number: 316

Serial Number: 162D25244

Name of Physician: M.D.

Type of Lead System: Unipolar

Name of Surgeon: C.B.

Date of Implantation: 7/21/75

Date of this Visit: 7/23/75

Months Since Implantation: 2 days

Measurements:	*Present:*	*Change (if any) Since Implantation*
1. Heart Rate:	pre-programming	post-programming
I. Automatic Mode:	70.59	70.60
II. Magnet Test Mode:	70.50	70.54
2. Pulse Interval (msec):		
I. Automatic Mode:	850.03	849.90
II. Magnet Test Mode:	851.06	850.53
3. Pulse Amplitude Lead II : mod RA on PM		
I. Leading edge:	280mv	210mv
II. Trailing edge:	235mv	200mv
4. Modified Pulse Width:	1.6msec	1.6msec
5. Sensing Function:	ok	
6. 1:1 Response:	ok	

7. Comments:
Pacemaker programmed to rate of 70.60 beats per minute and ma of 4.0. 100% capture at 2.3ma.
Pacemaker functioning properly.

8. Date of next visit: 10/24/75.

Figure 1

surveillance was sustained in 342 pacemakers during the three-year period. Eleven of 353 were lost to follow-up, most of these transferring to out-of-state locations.

One-hundred-thirty-eight (40.4%) of these pulse generators have terminated service, and 204 (59.6%) are still in service. Twenty-eight per cent of all pacemakers followed in clinic have already attained an implant life age exceeding the manufacturer's recommended elective replacement date by 1-14 months. Manufacturer's recommended elective replacement dates vary considerably for different pacemaker models, but were 22-24 months for many model types followed in our initial experience 1972-1975. We have followed 46 pacemakers (13.5% of all pacemakers followed) for a period of 25-29 months. Thirty-eight pacemakers (11.1%) have been followed 30-34 months; and 10 pacemakers (2.9%) have been followed for 35-39 months. This represents extended service life for the vast majority of these units.

Table 2 shows reasons for termination of service of 138 pacemakers. There were 90 elective replacements as compared with 16 emergency replacements required in the three year clinic experience following 342 pacemakers. Included in the emergency group were one pocket infection and one pocket skin erosion. Thus, 4.7% of all pacemakers followed required emergency replacement for problems not predicted or detected at routine clinic visits.

Among elective replacements, the maturity of the unit was the dominant reason for recommending replacement for 47 pacemakers. Clinical considerations and lack of definitive indicators for battery depletion in early units weighed heavily in these decisions. Evidence of battery depletion was the reason for elective replacement of 34 pacemakers. Asymptomatic systems failure was the reason for replacement of 9 pacemakers evaluated at scheduled clinic visits. Of the 16 unpredicted pacemaker failures, 5 were due to acute battery depletion occurring between clinic visits and 11 were due to other systems failure excluding battery depletion.

Pacemaker replacements can be listed conveniently as shown in Table 3, which lists failed units separately

Table 1

PACEMAKER CLINIC EXPERIENCE

					Months Followed				
Model	*Mode of Oper.*	*No. Followed*	*Still In Service*	*Service Term.*	*0-12*	*13-24*	*25-29*	*30-34*	*35-39*
M 5842	RI-B	17	0	17	0	6	3	5	3
M 5862	A-B	1	0	1	1	0	0	0	0
M 5862-C	A-B	9	0	9	0	7	2	0	0
M 5870-C	A-B	6	0	6	0	2	2	1	1
M 5906	A-B	1	0	1	1	0	0	0	0
M 5910	A-B	8 (1)	2	5	2	3	2	0	0
M 5913	A-U	1	1	0	1	0	0	0	0
M 5931	RI-U	2	2	0	2	0	0	0	0
M 5942	RI-B	81 (3)	37	41	8	24	19	21	6
M 5943	RI-U	33 (2)	20	11	8	13	4	6	0
M 5944	RI-B	8	7	1	3	5	0	0	0
M 5945	RI-U	22	19	2	10	12	0	0	0
M 5950	RI-B	4	4	0	4	0	0	0	0
M 5951	RI-U	16	16	0	16	0	0	0	0
M 5961	RI-U	23 (2)	18	3	8	12	1	0	0
M 5963	RI-U	2	1	1	2	0	0	0	0
M 9000	RI-CU	1	1	0	1	0	0	0	0
C-Omni Stanicor	RI-U	51	44	7	37	12	2	0	0
C-Omni Ecticor	RT-U	4	1	3	0	2	2	0	0
C-Ecticor	RT-U	14	6	9	0	10	2	2	0
C-Stanicor	RI-U	46 (3)	24	19	13	20	7	3	0
C-Ventricor	A-U	1	1	0	1	0	0	0	0
Merc	RI-U	1	0	1	0	1	0	0	0
G.E. A2072D	RI-B	1	0	1	0	1	0	0	0
Totals		353 (11)	204	138	118	130	46	38	10

( ) = Lost to follow-up; RI = R-wave inhibited; RT = R-wave triggered; B = bipolar; U = unipolar; A = asynchronous; C = converted to.

from non-failed units. Non-failed units are those removed electively only for reasons of "maturity of the unit." In 43 of 59 (72.9%) failed units, evidence of early failure was detected at a routine clinic visit permitting recommendation for elective replacement. In 16 of 59 (27.1%) failed units, "emergency" replacement was required. Thirty-four of 39 (87.2%) battery failures were detected early; but only 9 of 20 (45%) of systems failures were detected at scheduled clinic visits.

In all 106 pacemaker replacements, clinic recommendations accounted for 90 (84.9%) of elective removals, whereas 16 (15.5%) of replacements were considered emergency procedures. More favorably, only 16 out of 342 pacemakers followed in clinic (4.7% of all pacemakers followed) have required emergency replacement. In no instance did the failed unit result in the death of the patient. Battery depletion is the usual mode of failure and is anticipated (by definition) in a clinic in which pacemakers are followed until early depletion in order to extend pacemaker service life. This recognition was made at routine clinic visits in 87.2% of battery depletions and was made by the patient or his private physician in 12.8% of battery depletions.

Systems failures occur at random and are not predictable. Our clinic surveillance did detect 45% of systems failures at routine check-ups before the patients became symptomatic. Further, the clinic participated in the care of all emergency replacements, helping to identify and document insofar as possible the precise pacemaker systems problem upon hospital admission of the patient.

Time distribution which characterized the end of service of different pacemaker models indicated that battery depletion became more frequent with extended service life. Systems failures had no simple distribution pattern.

Deaths in patients followed are summarized in Table 4. There were 11 deaths among the 94 patients followed in the clinic's first year, 8 deaths in the second year, and 13 deaths in the clinic's third year, for an average mortality rate of 7.0%. This compares favorably to other published series. The cause of

Table 2

REASONS FOR TERMINATION OF SERVICE OF PULSE GENERATORS

Model	*Number Term. Service*	*Elective Replacement*			*Emergency Replacement*		*Total Deaths*
		Battery Failure	*Systems Failure*	*Maturity of Unit*	*Battery Failure*	*Systems Failure*	
M 5842	17	6	0	47	0	1 (L)	1
M 5862	1	0	0	0	0	0	1
M 5862-C	9	0	0	7	0	1 (L)	1
M 5870-C	6	2	0	3	0	0	1
M 5906	1	0	0	0	1	0	0
M 5910	5	0	0	2	2	1 (PI)	0
M 5942	41	7	0	19	0	3 (2L & 1SE)	12
M 5943	11	3	1 (C)	1	0	1 (L)	5
M 5944	1	0	0	0	0	1 (L)	0
M 5945	2	0	2 (1L) (1C)	0	0	0	0
M 5961	3	0	0	0	0	0	3
M 5963	1	0	0	0	0	0	1
C-Omni Stanicor	7	2	0	0	1	2 (C)	2
C-Omni Ecticor	3	2	0	1	0	0	0
C-Stanicor	19	8	5 (C)	1	0	1 (L)	4
C-Ecticor	9	3	1 (L)	4	1	0	0
Merc	1	0	0	0	0	0	1
G.E. A2072D	1	1	0	0	0	0	0
Totals	138	34	9	47	5	11	32
%	100%	24.6%	6.5%	34.1%	3.6%	8.0%	23.2%

(L) = Lead system failure; (C) = Component failure; (PI) = Pocket infection; (SE) = Skin erosion pocket.

Table 3

PACEMAKER REPLACEMENTS

		Elective	*Emergency*	*Total*
Failed Units	Battery Failure	34	5	39
	Systems Failure	9	11	20
	Total Failed	43	16	59
Non-Failed Units	Hypermaturity	47	0	47
	Total Replacements	90	16	106

death was determined when possible from attending physicians or patient's family. In 32 deaths, no direct pacemaker cause was documented. Of the decedents, 18 patients had consistently satisfactory underlying rhythms noted in the clinic, so that an unexpected failure to pace would not be anticipated as a cause of demise. In the 14 other decedents who were pacemaker dependent, 5 were known to have died from medical or surgical problems unrelated to cardiac rhythm. In the remaining 9, the cause of death was not determined but pacemaker related cause could not be excluded.

Table 4

CLINIC REGISTRATION (CUMULATIVE) AND YEARLY MORTALITY

Year	*Patients Registered*	*Deaths*	*% Mortality*
1972-1973	94	11	11.6%
1973-1974	183	8	4.4%
1974-1975	260	13	5.0%

In 27 of the 32 decedents, the pacemaker had been implanted for less than 24 months. Five pacemakers had been in position for greater than 24 months, only 2 of these in patients totally dependent on pacing for adequate cardiac rate. Thus, the clinic policy of attempting to provide extended service life of pacemakers probably did not contribute to the observed mortality in this series.

Discussion

Centralized follow-up of patients with permanent implanted cardiac pacemakers has become accepted practice at many large medical centers in the United States and abroad.[1-10] Escher and Furman at the Montefiore Hospital & Medical Center have established a large follow-up clinic with routinized procedures for pacemaker evaluation.[2-4, 11] Parsonnet has reported an extensive clinic experience on the surveillance of paced patients in the state of New Jersey.[12]

Our clinic procedure is similar to theirs. At each clinic visit a routine ECG and rhythm strip are evaluated for evidence of appropriate pacing (pacing artefact and QRS response). Spontaneous rhythms are noted. The tracings are examined to see if a triggered pacemaker fires or is suppressed appropriately. The pulse artefact is examined after electronic amplification by display on an oscilloscopic screen and photographed for precise measurement and comparison. Synchronous pacemakers are further evaluated when possible by suppression or augmentation of rate of the internal pulse by an externally applied pulse generator. R-inhibited units can be suppressed by the external stimulus and R-triggered units will show augmentation of rate to that of the externally applied pulse. In the first case, this demonstrates ability to "sense" and also unmasks the underlying rhythm. In the second case, sensing and ability to pace the myocardium are demonstrated.

The follow-up of pacemaker patients in clinician's offices does not ordinarily provide all the varied tests of function outlined above. A recent editorial in the *American Journal of Cardiology* strongly suggested that the surgeon implanting the pacemaker and the attending physician or consulting cardiologist are responsible from a medicolegal point of view of providing adequate aftercare, evaluation, and timely replacement.[13] The pacemaker clinic was the preferred method of surveillance.

Furman, Parker and Escher have reported that the organization of the pacemaker clinic and follow-up has kept emergency replacement of pulse generators to under 10% of those registered. "Emergencies" for complete failure to pace or for abrupt changes in indices implying impending failure were approximately 3%.[14] In our series, emergency replacements were kept down to 4.7% of those registered. Thus, the justification for the pacemaker clinic is the safety to the patient as well as the extended service life of the majority of units followed to the limit of beginning decrement of observed functions. A manufacturer's elective replacement when routinely applied tends to be premature for most units. The clinic is ideally set up to follow pacemaker patients and record changes in pacemaker indices and function. A thorough follow-up of 181 Medtronic pulse generators in 127 patients in Glasgow has been published by Green et al.[5] The period of time reviewed was the 4 years ending June 1970. The majority of units were followed well beyond the manufacturer's elective replacement time before indexes of impending failure occurred.

Pacemaker clinics have been established at medical centers throughout England, including St. George's Hospital, National Heart Hospital, and Guys Hospital.[7] Sowton has suggested that 300 paced patients per million population will soon be common in many areas of England. Clinics must be available to provide an average of 4 visits per pacer patient per year or 1200 per million population. Sowton feels that the regularity of clinic visits provides the major benefit and safety to those followed rather than the sophistication of any individual tests routinely provided, and we share this view.

Sowton has reported an overall mortality during pacing of 7% per year (for the 6 years surveyed prior to 1969). This figure includes deaths from all causes, both in and out of the hospital, whether or not related to pacemaker failure. The mortality for patients aged 70 and above was 10% per year.

Bleese has reported a mortality of 14% in the first year of pacing and an annual mortality rate of 5-5½% in subsequent years.[8] Shepard has reported a similar mortality rate of 10% per year of initial pacing with a five year survival rate of 59%.[9] Our Hartford Hospital clinic has thus far shown an average annual mortality of 7%.

The English experience reported was largely with Devices Implants Ltd. pulse generators, and German experience has been largely with Elema Shonander pulse generators. The Hartford Hospital experience has been preponderantly with Medtronic and a smaller number of Cordis pulse generators. While a strict comparison of mortality figures is not valid among these varied groups of patients, it is clear that all groups recognize that in patients requiring permanent implanted pulse generators, age, underlying cardiac disease, and concurrent illnesses take a substantial annual toll. Death from unexpected failure to pace is an infrequent event in all clinic series.

Clinic Development

Periodic telephone surveillance of pacemaker patients has been established in some centers and offers some distinct advantages.[10, 14] We now have many patients with mature pulse generators (age of implant more than 24 months) phone the clinic bi-weekly to transmit their pacemaker signal. Bimodal (asynchronous and synchronous) pulse repetition rates are determined electronically at the receiving station in the clinic. Bimodal ECG leads are recorded at the same time. Some parameters of pacer function can thus be evaluated even though the patient is remote from the clinic. This technique is well suited to pacemakers that show a distinct rate drop with first battery cell depletion, as is the case with almost all now in service. Because of clinic growth, tandem remote surveillance by telephone transmission is a practical necessity. However, we feel that coordinated, albeit less frequent, clinic visitations cannot be preempted altogether. We have aluded to the fact that "programming" should be done with direct ECG and oscilloscopic observation. Pulse contour analysis can only be carried out in the clinic, as is the case with overdrive and suppression testing. Future pulse generators requiring sophisticated follow-up are anticipated. Even now, the Atomic Energy Commission insists upon visitations in the evaluation of nuclear pacemakers.

And, last but not least, the psychological value of personal contact in this dependent population should not be underestimated. Patient acceptance of the role of the pacemaker clinic has been excellent. They feel secure with the regular surveillance and careful testing provided.

Patients are referred immediately to their own physicians when a problem is identified, and full reports of each clinic visit provide an ongoing record for referring physicians.

The average cost in this hospital for an admission for replacement of a permanent cardiac pacemaker is between $2200-$2800. Post-operative complications can extend the stay and the cost. Morbidity and absence from productive life must also be considered.

It is clear that the pacemaker clinic, by extending the service life of each pacemaker in so far as possible, can reduce the frequency of pacemaker replacements and, therefore, reduce the average annual cost of cardiac pacing for the patient. Clinic costs must be kept reasonable and the cost of telephone surveillance must be minimized if this potential economic benefit is to be realized.

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Granulomatous Meningoencephalitis and Cerebellar Dysplasia

Presumptive Evidence of Neonatal Herpetic Infection in Sudden Unexpected Infant Death.

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Abstract—A granulomatous meningoencephalitis with associated cerebellar dysplasia was encountered in an eight month old girl, who died suddenly and unexpectedly. The case was categorized, initially, as one of sudden-infant-death-syndrome and a post-mortem examination was performed at the request of the Medical Examiner, per state statute. There was clinical evidence suggesting a neonatal herpetic infection and the nature and distribution of the lesions encountered in the brain were considered, in this context, as indicating a probable cause and effect relationship.

Under the Rules and Regulations of the Commission on Medicolegal Investigation (established in 1969 by Public Act 699 of the General Assembly of the State of Connecticut) among certain categories of death, which are subject to investigation, are sudden or unexpected deaths not caused by readily recognized disease. The case to be presented here falls within this category and was so considered; a post-mortem examination having been requested by the Medical Examiner and having been performed by one of the authors (EMC).

Also, falling within this category, conceptually, are the so-called "crib deaths" or as currently referred to—sudden-infant-death-syndrome (SIDS). Whether these two terms should be considered as synonymous is debatable. Presently SIDS is defined as "the sudden death of an infant or young child (one week to one year), unexpected by history, in which a thorough post-mortem examination fails to demonstrate an adequate cause for death."[1] Such a definition, while presumably helpful to some,[2] confuses the issue for others, insofar as it begs the question and is based primarily upon a lack of findings. The implication, of course, is that these deaths relate to an unknown mechanism yet to be determined or discovered, perhaps a basic physiologic dysfunction without a concomitant anatomic expression.[1] Notwithstanding these considerations, occasionally infants are seen who die unexpectedly and just as unexpectedly display certain anatomic findings, which may or may not relate, in a causal manner, to death. By definition, however, such cases would tend to be excluded from the SIDS. Therefore, when one reads of the observation of certain anatomic abnormalities in an infant, which otherwise fulfill the criteria of the syndrome, one is confronted with the illogical situation of no longer referring to the syndrome, by definition. Assuming that we are not merely confused by semantics, it appears to us that the current definition of the SIDS is conceptually inadequate. On the other hand, if clinicians find a certain comfort and validity in thinking of the syndrome, as defined, then perhaps the term "crib deaths" should be resurrected to include those cases in which post-mortem examination yields findings, which might be accepted as death related, as well as those cases (SIDS) in which no such findings are demonstrated.

With this in mind, we are reporting our observations in an infant, 8 months of age, who died suddenly and unexpectedly, yet who had unusual findings in the central nervous system and an interesting neonatal history, which probably relates to those findings.

Case Report

The patient weighed 2,580 gm at birth, following a full-term, normal delivery to a VDRL non-reactive, 22 year old, gravida 3, para 2. An Apgar rating of 7 was recorded at 1 minute and of 9 at 5 minutes. The umbilical cord was short and was wrapped around the left upper extremity, which had several denuded areas over the arm and forearm. Furthermore, a papular, erythematous rash was observed over the left shoulder, arm and upper forearm; although, there was a full range of motion in the affected extremity. No other abnormalities were recorded.

On the next day, consultation with a dermatologist resulted in the observation of an irregularly linear pattern of papules, some crusted, some surrounded by halos of erythema, along with sharply defined foci of apparent atrophy and dark pigmentation, ranging in size from 3 to 10 mm. in diameter, extending from the left upper back over the arm and forearm to the hand with involvement of the thumb. Staphylococcus albus (coagulase negative) was cultured from the skin and Bacitracin was applied to the lesions, which rapidly resolved. While no definitive dermatologic diagnosis had been established, among the possibilities considered were a combination of trauma and infection (including neonatal herpes zoster), bullous ichthyosiform erythroderma, and nevoid epidermal defect. Both the infant and mother were discharged from the hospital four days after birth.

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At 3 months of age the infant was seen and treated for a mild, upper respiratory infection. One month later, the infant was admitted to the hospital with more severe respiratory difficulties with a fever of 103°F and a WBC count of 18,700 cells/mm.^{3} A chest x-ray film, however, was unrevealing and bacterial cultures of nose and throat yielded normal flora. She was treated symptomatically and made a rapid recovery. At this time (age 4 months) the skin over the left upper extremity was focally scarred with the formation of small keloids.

At approximately 8 months of age, the infant was found lifeless in her crib and was brought immediately to the emergency room of the hospital, where she was pronounced dead after futile efforts at resuscitation.

Pathological Findings

A body weight of 6,170 gm was recorded along with a crown-rump length of 40.5 cm and a crown-heel length of 63.5 cm. An irregularly linear, pale tan region of discoloration of the skin over the left shoulder and upper extremity was noted. Microscopic examination of the skin was unrevealing. A small umbilical hernia was present. No other external abnormalities were evident. Examination of the viscera disclosed pulmonary congestion with a chronic bronchitis and an early, acute bronchopneumonia. Diplococcus pneumonia type III was cultured from the right lung and from blood removed from the heart. Bacterial culture of the cerebrospinal fluid resulted in no growth. Focal calcifications were found in the adrenal glands. No gross or microscopic lesions were encountered in the heart or among the other abdominal viscera and organs, other than acute, passive vascular congestion.

Neuropathologic Observations

The brain weight prior to fixation was 430 gm. No external abnormalities of the cerebrum were noted. The leptomeninges appeared normal, the major convolutions were well-formed, and the gyral pattern was that of a mature infant. There was a striking defect in the cerebellum, involving primarily the hemispheres, which were markedly diminished in size compared to the vermis which appeared relatively intact (see Figure 1). Multiple coronal sections disclosed a slightly to moderately dilated ventricular system, including the aqueduct and fourth ventricle. The corpus callosum was considered normal and no focal lesions were detected in the cerebrum or brain stem. Both cerebellar hemispheres were reduced to tiny nubbins of barely recognizable folial tissue (see Figure 2).

Microscopic examination of the brain disclosed a chronic meningoencephalitis, characterized by a diffuse mineralization of the cerebral paraventricular tissue (see Figure 3) and by a giant-cell granulomatous angiitis (see Figure 4), involving primarily the hypothalamus and cerebellum. While the gross appearance of the cerebellar hemispheres suggested a dysplasia, the microscopic appearance was one of atrophy of varying degrees of intensity, rather sharply demarcated from intact cerebellar tissue (see Figure 5) and, generally, without any specific relationship to the encephalitic process, which was most striking in the white matter among the roof nuclei (see Figure 6).

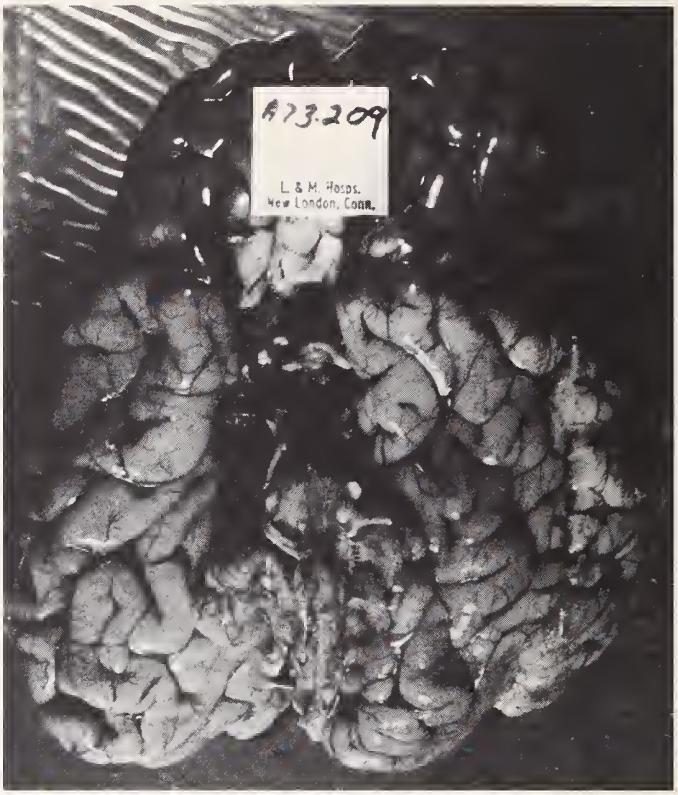

Figure 1

Undersurface of the brain, disclosing poorly developed cerebellar hemispheres.

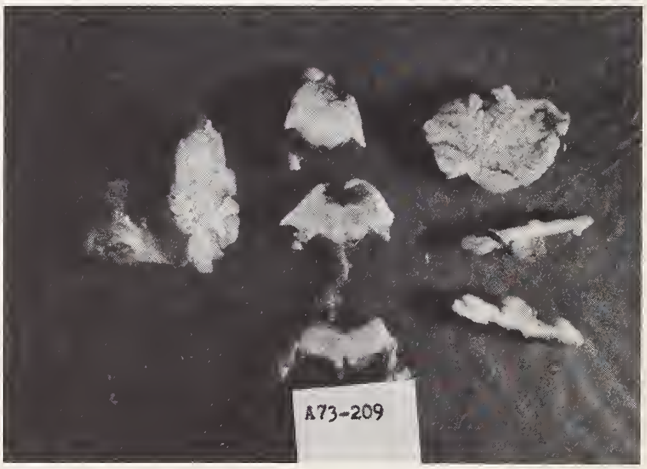

Figure 2

Coronal sections of pons and medulla flanked by one unsectioned cerebellar hemisphere and one sectioned parallel to the vermis, which contains a normal folial pattern in contrast to the sectioned hemisphere in which only tiny nubbins of folial tissue are recognizable.

Review of the Literature and Clinical Discussion

The devastating central nervous system sequelae of perinatal infections are well-recognized. Micro-

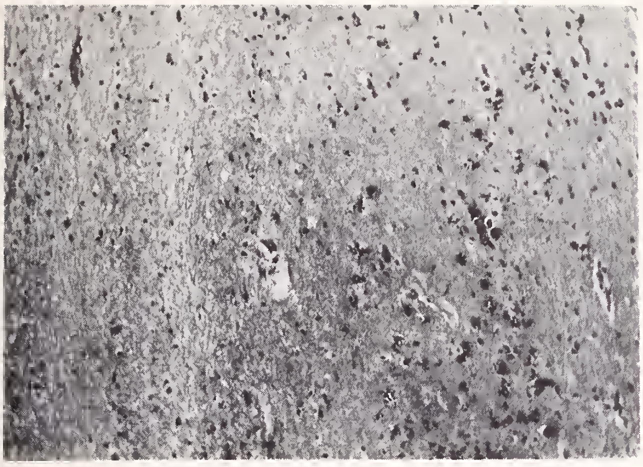

Figure 3

Extensive mineral deposits in the medial thalamus adjacent to the third ventricle (hematoxylin-eosin, original magnification x25).

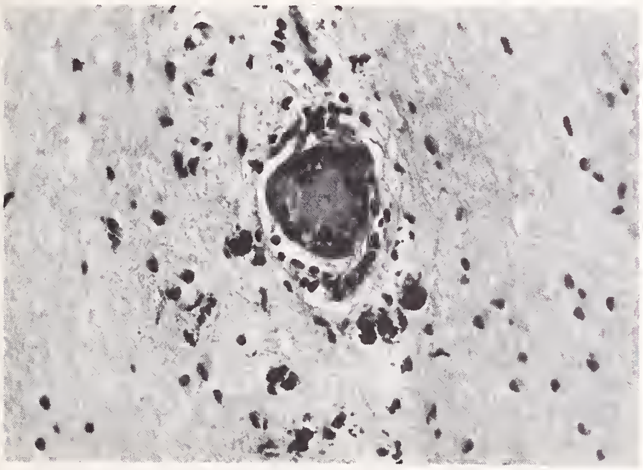

Figure 4

Multinucleated giant cell in small vessel wall in hypothalamus, ringed by focal mineral deposits (hematoxylin-eosin, original magnification x400).

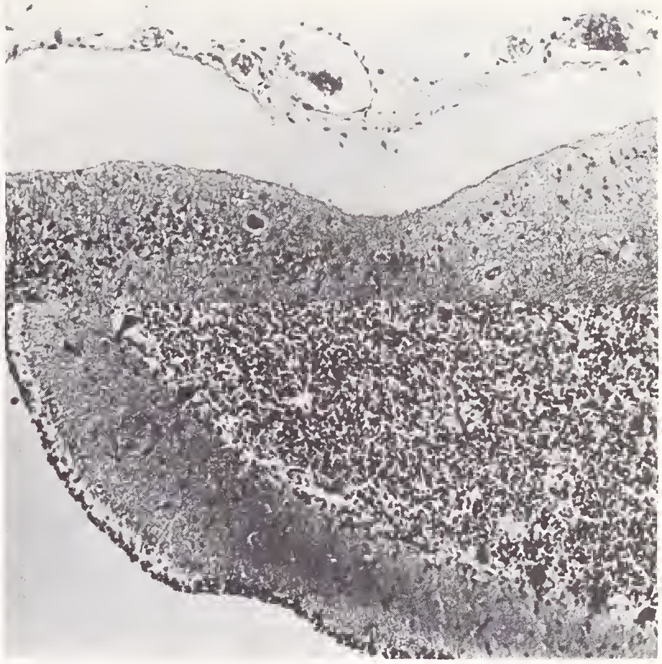

Figure 5

Intact cerebellar cortex of vermis in juxtaposition to cortex of cerebellar hemisphere in which the cells of the external and internal granular layers have disappeared, the Purkinje cells are no longer present and only a few astrocytes remain (hematoxylin-eosin, original magnification x25).

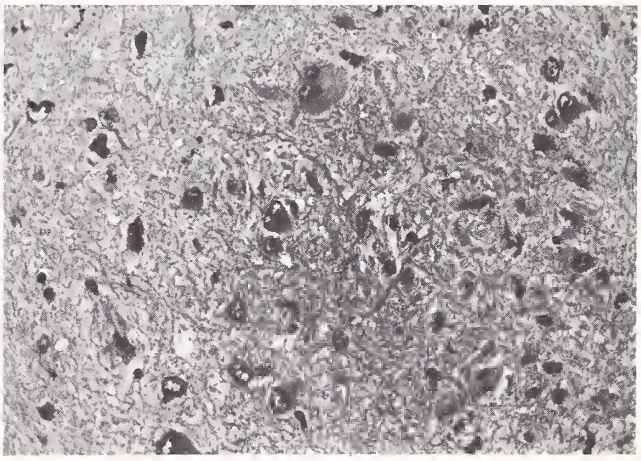

Figure 6

Atypical, reactive astrocytes in white matter adjacent to dentate nucleus of cerebellum. Tiny mineral deposits are also seen (hematoxylin-eosin, original magnification x400).

cephaly, severe mental retardation and major motor and speech deficits are seen after infections in man, and gross malformations, such as hydrocephalus, hydranencephaly and porencephaly have been induced experimentally with viruses in fetal and neonatal animals.[3] A number of viral infections in laboratory animals have been found to induce morphologic changes resembling primary defects in neuroembryogenesis.[3] These symmetrical, non-inflammatory defects lack the neuropathologic features usually associated with antecedent infection and resemble malformations of human brain usually attributed to toxic, genetic or vascular etiology.[3]

Cerebellar hypoplasia has been observed with the parvoviruses group in the rat, hamster, cat and ferret with rat viruses, in the cat and ferret with feline panleukopenia virus, and in the mouse with the minute virus of mice.[4] Furthermore, ungrouped viruses, such as hog cholera in the pig and bovine virus diarrhea in the cow and sheep, have produced or been associated with cerebellar hypoplasia along with other malformations of the central nervous system.[4]

Generally, less consistent and milder lesions in the cerebellum in human cases, as compared with animal models, have been observed and can be explained by differences in the relative degree of development of the telencephalon and the cerebellum.[5] Phylogenetically, humans have the best developed telencephalon, so that the analage of the telencephalon, rather than of the cerebellum, would naturally become the prime target for any pathogen that has a selective affinity for proliferating elements of the developing brain.

Careful histologic studies of the cerebellum in cases of congenital rubella and cytomegalovirus encephalitis have revealed multifocal cerebellar lesions.[5] Although the biologic properties of rubella and cytomegalovirus are quite different, there are many common features in their pathogenesis and host-parasite relationships with humans. They, along with herpes simplex, have been shown to induce infection in human fetuses, resulting in various developmental abnormalities. In addition, both infect embryos and fetuses from a maternal infection that is typically mild or subclinical. Both viruses are relatively benign to adult tissues, but malignant to immature tissues. In addition to rubella and cytomegalovirus, numerous other viruses have been known to affect the fetus, including as noted, herpes simplex, as well as mumps, rubeola, Western equine encephalitis, chickenpox, smallpox, vaccina, polio, hepatitis and Coxsackie B viruses. The tissue damage in the fetus by these viruses is usually so severe and generalized that the end result is almost always abortion or stillbirth of the fetuses. Chronic infection of the human fetus with long survival has been noted only with rubella and cytomegalovirus and rarely with herpes simplex.[5]

Other agents, most notably the parasite toxoplasma, may produce defects in the developing nervous system; however, such agents are not limited to the living, as both chemical (anti-metabolites) and physical (x-irradiation) agents, having a specific affinity to actively replicating cells, but practically not affecting mature or post-mitotic cells, have been shown to produce cerebellar hypoplasia.[5]

What evidence exists linking neonatal herpetic infection with "congenital" malformations? In a preliminary report[6] of a prospective study of the teratogenic potential of microorganisms begun in 1969, sera, which were collected from 224 mothers of defective children and matched controls during early pregnancy and one or two months after delivery, were tested for antibodies against ten different viruses, Mycoplasma pneumoniae, and Toxoplasma. Seroconversions were found in 103 sera in the defect group and in 71 control sera. The excess in the defect group was mainly due to increasing antibody titers against herpesviruses (herpesvirus types 1 and 2, cytomegalovirus, and varicella-zoster). Yet, it should be emphasized, that the authors did not believe their data was sufficient to indicate a causal relation between herpesvirus infection and fetal malformation.

Of greater significance in this regard is the study of Percy et al.[7] Four puppies, experimentally infected with canine herpesvirus and one, spontaneously infected animal, which survived the disease, were examined. In the animal with naturally occurring infection a segmental cerebellar dysplasia was observed, with canine herpesvirus antigen demonstrated in the cerebellar cortex by fluorescent microscopy. In each of the animals there was a focal, granulomatous encephalitis with associated mineralization of brain tissue. Possible confusion of the observed lesions with toxoplasmosis was noted and, although canine herpesvirus infection is usually a fatal illness in the newborn pup, occasional animals do survive. Furthermore, the presence of cerebellar dysplasia indicates that the virus may, on occasion, impair the normal differentiation of some tissues. Attempts to isolate the virus from the cerebellum were unsuccessful.

Granulomatous encephalomyelitis in human infants has been attributed to both toxoplasmic and virus infection.[8]

Conclusion

In light of these studies and on the basis of the clinical and pathologic findings in our case, we believe there is sufficient evidence, albeit circumstantial, to implicate a neonatal herpetic infection in the development of a granulomatous meningoencephalitis with an apparently associated cerebellar dysplasia (actually, focally confluent atrophy). Death, which occurred suddenly and without expectation in this infant, was associated with an early acute bronchopneumonia.

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Hypercalcemia and Metastatic Intestinal Leiomyosarcoma: A Case of Ectopic Parathyroid Hormone Production

Noel I. Robin, M.D., Lewis M. Siegel, Ph.D., Charles D. Hawker, Ph.D., and Melville G. Magida, M.D.

Abstract—A 66-year-old male with hypercalcemia and metastatic small intestinal leiomyosarcoma is described. Evidence is presented for ectopic production of parathyroid hormone as the reason for the hypercalcemic state. This would be the first reported case of such an association.

Introduction

While hypercalcemia is the most common endocrine abnormality associated with neoplasia,[1] its presence is primarily confined to specific tumors such as breast, lung and renal carcinoma.[2] A case is described of the rare intestinal leiomyosarcoma and associated hypercalcemia. Evidence is presented to associate the hypercalcemic state with ectopic parathyroid hormone production. This would be the first written documentation of such as association.

Case History

A 66-year-old male was admitted to Stamford Hospital for the fourth time on January 31, 1974 for weakness, malaise and lassitude.

His first admission in 1971 was an exploratory laparotomy for persistent upper G-I bleeding. Upper G-I series and gastroscopy for similar symptoms in 1970 were unrevealing. Physical examination was within normal limits and except for a mild anemia (hemoglobin-11.5 gm/dl, hematocrit-34 percent) and guiacol positive stools, laboratory values were normal. These values and normal ranges within parentheses included BUN-13 mg/dl (10-20), creatinine-1.1 mg/dl (0.7-1.4), calcium 8.9 mg/dl (8.5-10.5), phosphorus-3.5 mg/dl (2.5-4.5), and alkaline phosphatase - 70 mU/ml (30-85). Exploratory laparotomy revealed a leiomyoma of the intestinal wall which was subsequently resected and intestinal anastamosis performed. The patient had an uneventful postoperative course.

His second admission in May, 1973 was for colicky right upper quadrant pain. Pertinent physical findings were confined to the right upper abdomen. There was local tenderness and guarding. Oral cholecystogram revealed cholelithiasis. Pertinent laboratory values included hemoglobin-14.5 gh/dl, hematocrit-45%, urinalysis—normal. Serum analysis: calcium-9.7 mg/dl, phosphorus - 2.93 gm/dl, alkaline phosphatase 51 mU/ml, total protein - 7.1 gm/dl (6-8) and cholesterol - 215 mg/dl (150-300). Exploratory laparotomy revealed chronic cholecystitis, cholelithiasis, and xanthomatosis of the gall bladder with local recurrence of leiomyosarcoma. After resection of diseased tissue, the patient's subsequent course was stable until the progressive development of weakness, anorexia, nausea and emesis eventuated in his third hospitalization on January 12, 1974.

Physical examination at this time demonstrated cachexia without icterus. A hard and diffuse mass filled the lower abdomen. There were no bony abnormalities on radiologic examination of the skeleton. Pertinent laboratory values on admission included hemoglobin - 12.0 gm/dl, urine - S.G. of 1.006 with no abnormalities. Calcium - 11.4 mg/dl, phosphorus - 3.6 mg/dl, cholesterol - 242 mg/dl, glucose 100 mg/dl (65-110) BUN - 24.6 mg/dl, creatinine - 1.36 mg/dl, total protein - 7.9 gm/dl, LDH - 347 mU/ml (100-225). SGOT - 90 mU/ml (10-40), total bilirubin - 0.8 mg/dl (0.2-1.0), alkaline phosphatase 118-mU/ml. Calcium excretion was 10.0 mg/24 hours. Creatinine clearance - 43 cc/minute, Na - 141.5 mEq/l, K - 3.9 mEq/l, HCO3 26.7 mEq/l and chloride 99 mEq/l, tubular reabsorption of phosphate - 84.3%. Serum parathyroid hormone (PTH) concentration[3] on the fourth hospital day was 255 pg/ml (mean ± S.D. + 255 ± 92), with a simultaneous serum calcium by atomic absorption spectroscopy (AAS)[4] of 11.1 mg/dl (8.8-10.0). This "normal" PTH value was in fact too high for the concomitant serum calcium based on the inverse relationship between serum PTH and serum calcium and the published experience of this parathyroid hormone assay.[3] Repeated serum calcium determinations were 11.2 mg/dl (Day 5). On that day, adriamycin. 25 mg/M^2 and 1-(2-chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU), 70 mg/M^2 were administered intravenously.

The subsequent clinical course was characterized by progressive cachexia, lethargy, anorexia and confusion. On his final admission, pertinent laboratory values included hemoglobin - 10.8 gm/dl, hematocrit 33.2%, WBC - 5.600 with normal differential. Serum levels: Na - 142 mEq/l, K - 39 mEq/l, HCO3 - 23 mEq/l, Cl - 106 mEq/l, BUN 13 mg/dl, glucose - 121 mg/dl, total protein - 6.86 g/dl, calcium - 10.6 mg/dl on day number one and 11.1 on day number four, phosphorus - 3.24 mg/dl, cholesterol - 198 mg/dl, uric acid - 5.21 mg/dl, creatinine - 1.2 mg/dl, bilirubin - 0.9 mg/dl, alkaline phosphatase - 131 mU/ml, LDH - 368 mU/dl, SGOT - 106 mU/dl. Serum PTH determinations done on the eighth, seventeenth, nineteenth and twentieth hospital days were 231, 309, 300 and 254 pg/ml respectively—all elevated relative to their concomitant elevated serum calciums (AAS) of 11.3, 10.4, 10.3 and 10.3 mg/dl. Urinary adenosine - 3′, 5′ - cyclic monophosphate[5] (cyclic AMP) was 33.9 μM/g creatinine on the nineteenth hospital day and 24.6 μM/g creatinine on the twentieth hospital day. Both values were significantly elevated above normal (1.7 - 4.4).[6]

The patient progressively deteriorated with death on the twenty-first hospital day. Complete autopsy confirmed widespread sarcoma with metastases to the peritoneum, mesentery, omentum, wall of ileum and colon and capsule of the liver. No bony metastases were noted. All four parathyroid glands were identified and considered to be normal.

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Discussion

Myomatous tumors of the small intestine are rare.[7] Leiomyosarcomas of the small intestine accounted for five percent of small bowel tumors encountered over a nineteen year period.[8] An extensive review of seventy-six cases from the Mayo Clinic in 1955 alluded to approximately two hundred and thirty reported cases in the world's literature.[9] While local signs and symptoms such as abdominal pain, palpable mass and melena were common, gross evidence of metastases are rare. While serosal and local peritoneal implants can occur, there has been no reported documentation of osseous metastases or hypercalcemic states.

There has been a single case report of a uterine leiomyosarcoma associated with hypercalcemia.[10] Pre-operative serum calcium values ranged from 10.7 to 13.0 mg/dl with a respective serum alkaline phosphatase value of 4.0 KAU. Tubular reabsorption of phosphate values were eighty-five and eighty-eight percent, respectively, and corticosteroid administration did not affect serum calcium values nor did calcium infusion affect urine phosphate eccretion.

Hypercalcemia, on the other hand, as an associated metabolic abnormality of the neoplastic state, is relatively common.[2] First described by Gutman, et. al.,[11] in 1936 and acknowledged as a possible syndrome by Albright in 1941,[12] the literature is replete with comprehensive reports of this association. Carcinoma of the breast, lung and kidney[1] comprise the most common neoplasms. Although skeletal metastases are probably a major cause of hypercalcemia, other factors include ectopic parathyroid hormone[13] production, the possible elaboration of a hypercalcemic sterol,[14] and production of a non-parathyroid hormone hypercalcemic agent.[15]

The case presented is an example of hypercalcemia in a patient with documented metastatic leiomyosarcoma of the small intestine. Although microscopic foci cannot be excluded, autopsy confirmed the radiologic absence of osseous metastases. No microscopic abnormalities were demonstrated in those bones routinely examined.

Ectopic hyperparathyroidism is strongly suspected in this case in view of serum PTH levels inappropriately elevated for the degree of hypercalcemia. Non-parathyroid hormone mediated hypercalcemic states are invariably associated with depressed levels of the hormone,[16] whereas levels in patients with primary hyperparathyroidism tend to be even higher than in patients with ectopic hyperparathyroidism.[17] These general observations have been found to be true with the PTH assay employed in this case.[3, 18]

The elevated urinary cyclic AMP levels are consistent with the known metabolic actions of PTH on the renal tubule,[19] and are consistent with a diagnosis of increased parathyroid hormone activity.[20] The tubular reabsorption of phosphate (TRP) of 84.3% in the presence of modest elevations in serum BUN and creatinine and a creatinine clearance of 43 cc/minute is also consistent with the diagnosis. The TRP value is borderline and might have been lower still had there not been compromise of renal function. Presence of normal parathyroid glands at the time of autopsy make this site of hormone production unlikely.

Minor fluctuations in serum calcium values were probably of a non-specific nature despite an isolated value of 10.2 mg/dl after treatment with Adriamycin and CCNU. Despite common antineoplastic effects, neither Adriamycin nor CCNU have the hypercalcemic activity of Mithramycin.[21] Other chemical abnormalities might be reflective of hepatic derangement.

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Pre-Baronian Tissue Transfer or Should the Plastic Surgery Research Council Change Its Seal?

M. Felix Freshwater, M.D.

1975 marks the 20th anniversary of the founding of the Plastic Surgery Research Council. This sheep (Figure 1) with the skin grafts on his back is the organization's seal. Originally the sheep appeared in the book *Degli Innesti Animali* written by Guiseppi Baronio, a 19th century Milanese physician, in 1804.[1] (Figure 2.) Historical investigation undertaken in this country and Europe over the past eight years led to the proposition: Should the Plastic Surgery Research Council change its seal in view of the fact that there are documented examples of pre-Baronian tissue transfer?

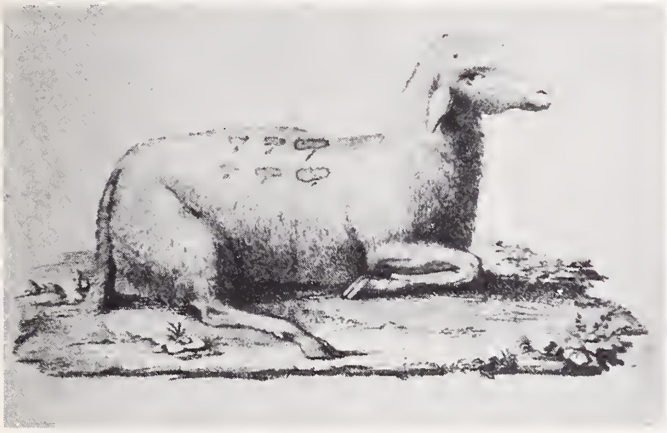
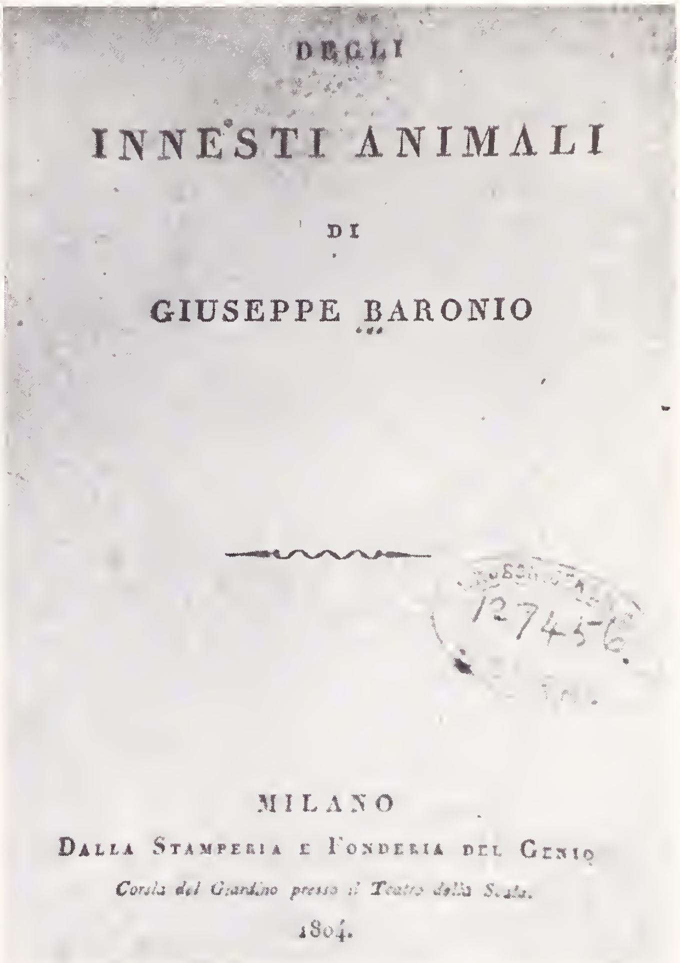


Figure 1

Plastic Surgery Research Council seal adopted from this engraving from Baronio's *Degli Innesti Animali.* Skin grafts harvested and replaced on areas a - f. (Courtesy National Library of Medicine, Bethesda, Maryland.)



DEGLI

INNESTI ANIMALI

DI

GIUSEPPE BARONIO

MILANO

Dalla Stamperia e Fonderia del Genio

Corsia del Giardino presso il Teatro della Scala.

1804.

12745-6

Figure 2

Title page from *Degli Innesti Animali.* (Courtesy National Library of Medicine, Bethesda, Maryland.)

Historical Principles

Before embarking on a tour of pre-Baronian tissue transfer, it is advisable to remember the principles of historical priority formulated by Sir Francis Darwin and Sir Richard Owen. These principles state that it is not important to know who was first—it is important to know who led others down the path of his discoveries.

Owen said:[2]

> "He becomes the true discoverer who establishes the truth; and the sign of the proof is the general acceptance."

Darwin stated:[3]

> " . . . in science the credit goes to the man who convinces the world, not to the man to whom the idea first occurs. Not to the man who finds a

---

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Presented at the Twentieth Annual Meeting of the Plastic Surgery Research Council April 11, 1975, New Haven, CT.

> grain of new and precious quality, but to him who sows it, reaps it, grinds it, and feeds the world on it."

The history of plastic surgery contains innumerable examples of firsts that did not bear fruit because they were neither convincing nor accepted. Some of these firsts, frequently invoked in reviews of the history of plastic surgery, will be discussed as examples of pre-Baronian tissue transfer and alternative seals for the Plastic Surgery Research Council will be suggested.

Fioravanti's Nose

An early tale of tissue transfer was told by Leonardo Fioravanti (Figure 3) in his book *Il tesoro della vita humana* published in 1570.[4] This was pithily translated in John Thomson's *Lectures on Inflammation* in 1813 even though Thomson wrongly attributed the tale to another work by Fioravanti:[5]

Figure 3
Leonardo Fioravanti (Courtesy National Library of Medicine, Bethesda, Maryland.)

> "In that time that I was in Africa, says Phioravant, there happened a strange affair and that was this: a certain gentleman, a Spaniard, that was called Il Signoir Andreas Gutiero, of the age of 29 years, upon a time walked in the field and fell at words with a soldier and began to draw; the soldier seeing that, struck him with the left hand and cut off his nose and there it fell down in the sand. I then happened to stand by and took it up and pissed thereon to wash away the sand and dressed it with our *balsama artificiato* and bound it up and so left it to remain eight or ten days, thinking that it would have come to matter (*i.e.,* going to rot); nevertheless, when I did unbind it I found it fast conglutinated and then I dressed it only once more and he was perfectly whole so that all Naples did wonder thereat as is well known, for the said Signoir Andreas doth live and can testify the same."

Fioravanti might be given credit for performing the first successful composite autograft. Despite the fact that statistics did not exist at the time, *i.e.,* during the 16th century, one might say that this report was a forerunner of modern clinical trials in the sense that it is the earliest example of a plastic surgical report to mention the significance of a p value. However, Fioravanti's credibility is not beyond reproach, for as Gnudi and Webster stated:[6]

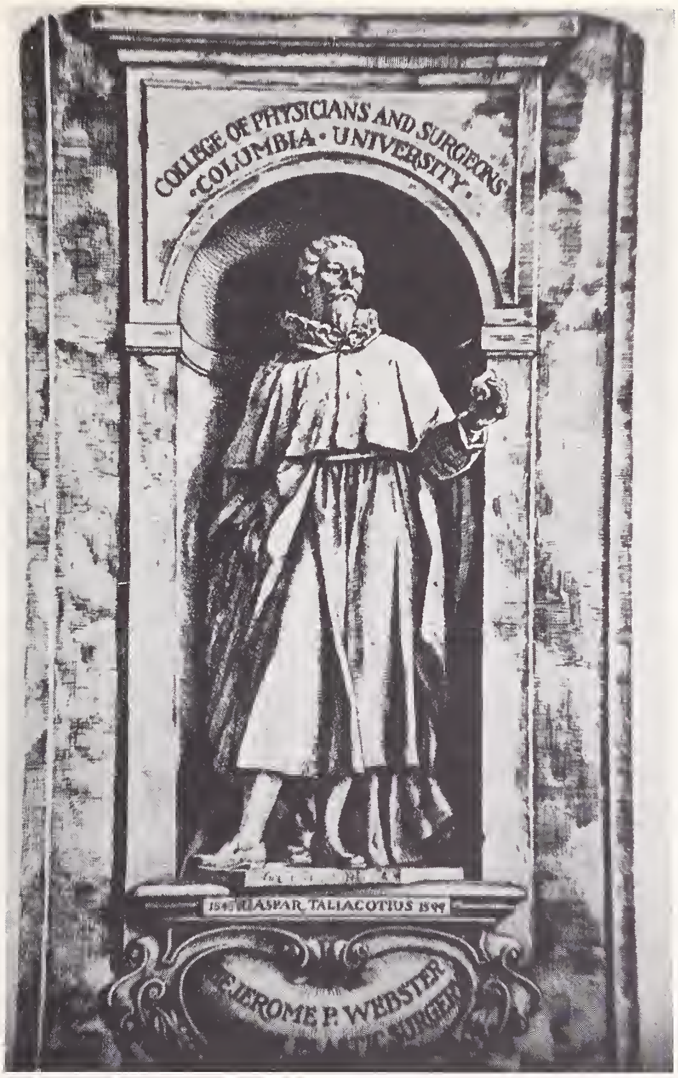
> "The boastfulness of his writings and the fact that he unjustifiably claimed a degree from Bologna, do, in fact, place him beyond the pale of respectability."

The fact that Fioravanti's surgical feats were not duplicated, let alone widely accepted, tends to make his report fantasy and not fact. It is not acceptable under Owen's and Darwin's criteria and is only worth remembering because it shows that the idea of tissue replantation existed in men's minds in such early times.

Tagliacozzi—Father of Plastic Surgery

The earliest known conceptual approach to the replacement of missing parts was made by Gaspare Tagliacozzi (Figure 4), Professor of Anatomy at the University of Bologna in the 16th century. Tagliacozzi succeeded in reconstructing noses, lips, and ears by the use of flaps of local and distant tissue. Tagliacozzi was by no means the first surgeon to accomplish these feats. Indeed, the art of reconstructing noses from local flaps was practiced in ancient India. Furthermore, the use of distant flaps from the patient's arm to reconstruct his nose was known to have been performed before Tagliacozzi by a Sicilian surgeon, Antonio Branca, whose family had been constructing noses from local flaps for more than a century.[7] Tagliacozzi is respected because he conceptualized and codified the principles and practice of plastic surgery necessary to successfully reconstruct lost parts. Gnudi and Webster have stated:[8]

> " . . . He did not claim to have invented the art, but rather to have organized it, perfected it, and given it to the world in usable form. The clearest and most succinct statement of his aims and of his own feeling as to his relation to earlier writers is found in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COLUMBIA · UNIVERSITY
1545 GASPAR TALIACOTIUS 1599
JEROME P. WEBSTER

Figure 4
Gaspare Tagliacozzi. Bookplate of Dr. Jerome P. Webster adapted from statue at the University of Bologna (Courtesy of Dr. Jerome P. Webster.)

> the *Dedication* to the *De curtorum chirurgia* . . . 'The ancients, actually, so far as I know, wrote little or nothing on this subject. It is recent writers—and I may say, of good repute—whose expositions of it have been inaccurate and misleading, although they thought they were describing it correctly. Such errors, I felt, ought to be removed from men's minds by propounding and introducing the truth instead, in accordance with the reality, so that if a person should wish some time to practice this still undeveloped part (of surgery)—for the same spirit might move another to this as it did me—he should not be uncertain as to how to execute it and do wrong things instead of right.' "

In addition to describing the fundamental principles and techniques of plastic surgery as he knew it, Tagliacozzi stated his goal of plastic surgery which is as apt today as it was when he wrote it over three centuries ago:[9]

> "We bring back, refashion, and restore to wholeness the features which nature gave but chance destroyed, not that they may charm the eye but that they may be an advantage to the living soul, not as a mean artifice but as an alleviation of illness, not as becomes charlatans but as becomes good physicians and followers of the great Hippocrates. For although the original beauty of the face is indeed restored, yet this is only accidental, and the end for which the physician is working is that the features should fulfill their offices according to nature's decree."

Tagliacozzi might seem to be a proper seal for the Research Council; however, he is already the seal of the American Board of Plastic Surgery and his patient (Figure 5) is the seal of the American Association of Plastic Surgeons.

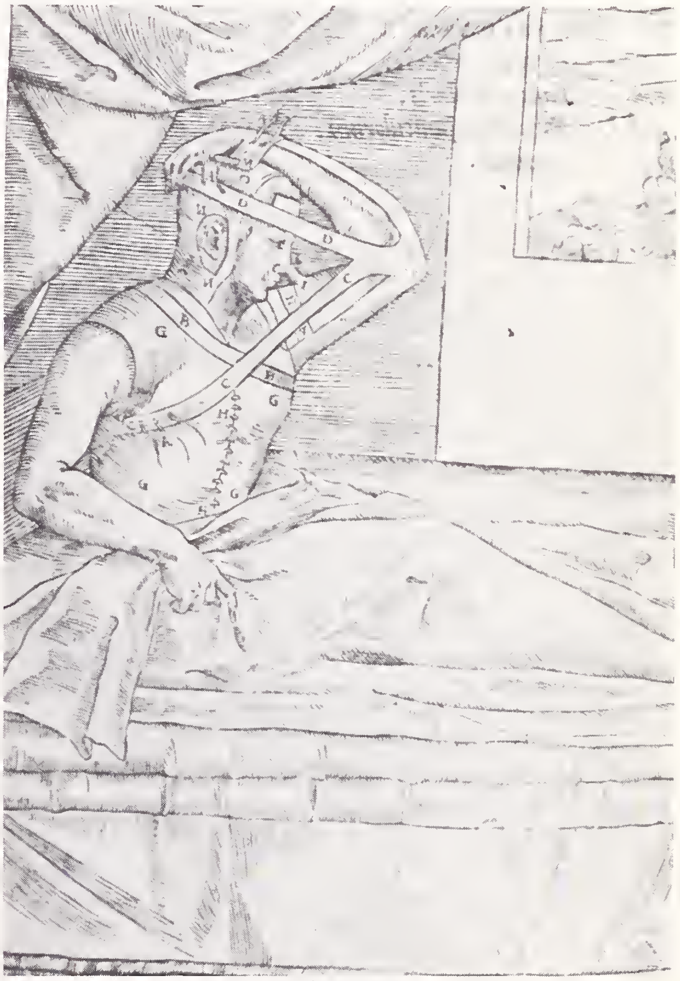

Figure 5
De Curtorum Chirurgia (Figure 8). This woodcut is from the official Bindoni edition and is recognizable as such by the scenery in the upper right corner of the plate. (Courtesy National Library of Medicine, Bethesda, Maryland.)

Tagliacozzi's Legacy—Hudibras

Furthermore, many of the misconceptions about transplantation that Tagliacozzi attempted to correct during his lifetime flourished after his death and led to a neglect of his techniques for over two centuries. Foremost among the misconceptions was that of "sympathy" of which Gnudi and Webster state:

> "The greatest injury to the acceptance of the use of plastic operations came from the diffusion of the belief that the reparative material could be taken from a slave or other person than the patient, and that, under such circumstances, a kind of mystic sympathy existed between the new nose and the person from whom it had been taken, causing the nose to die when the original donor died . . ."[10]
>
> " . . . Here, during the seventeenth and eighteenth centuries the most telling strokes of mockery were applied to the figure of the sympathetic slave in the satire of Samuel Butler, *Hudibras:*[11]
>
> 'So learned Taliacotius from
> The brawny part of porter's bum
> Cut supplemental noses which
> Would last as long as parent breech:
> But when the last Date of Nock was out
> Off dropt the sympathetic snout.'"[12]

Transplantation and the Royal Society

In his diary, Samuel Pepys wrote that *Hudibras* was for sale in London on December 26, 1662.[13] One may speculate that literature inspired scientific inquiry because of some interesting minutes in "The History of the Royal Society of London" less than one year later:[14]

> 1663, September 16, "Dr. Wilkins proposed the experiment of making a piece of the skin of a dog to grow upon another. Some things were objected against the probability of success thereof, viz., how veins, arteries, and fibres could disseminate themselves and grow into this strange piece of flesh patched on; it being necessary even to the restoring of a separated part to the same animal that there may be left some vessels, and that they join one another, and it being hardly conceivable, how the healing can be effected, where the orifices of said vessels do not meet. Others alleged experience and several examples of separated parts healed together again."
>
> "It was ordered hereupon that the experiment should be first tried with a piece of skin cut from the body of a dog, and sewed again upon the same dog: and Dr. Croune and Mr. Hooke were appointed curators thereof, and the operator ordered to provide a dog against the next meeting."
>
> "Mr. Hooke was also desired to try the growing of hair, and of a cock to spur upon the head of a cock."

However, Hooke and Croune were too busy making preparations for a site visit by their grantor, Charles II, and probably for this reason the minutes of October 14 reported:

> "Dr. Croune and Mr. Hooke had not yet met to cut a piece of dog's skin and sew it on again in order to see whether it will grow; and Dr. Charleton, affirming that he had tried this experiment formerly, he was desired to meet on the Friday following with the two other curators at Gresham College, and there to make the experiment together."

Charleton (Figure 6), Croune, and Hook met to perform the experiment for the minutes of October 21st report:

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Figure 6

William Charleton, M.D. A founder of the Royal Society who attempted the first known skin grafting experiments. (Courtesy National Library of Medicine, Bethesda, Maryland.)

> "The operator produced the dog, a piece of whose skin had been cut off and sewed on again; and he related that as soon as the skin was cut off, it shrunk into half its dimensions, so they could not stretch it out so far as to cover the whole flesh with it, as it had done before; but yet it looked as if it would grow on again. The whole process was ordered to be given, in writing by Mr. Hooke . . . "

At a meeting the next month (November 25th) further attempts at skin grafting were postponed until the following spring:

> "The experiment of cutting off a piece of a dog's skin was ordered to be deferred until a warmer

season. The operator gave an account that the old spur put on the cock's head was fallen off; but that the young spur, put on within the skin, and covered therewith, proved firm and grew."

On May 18, 1664, the minutes state:

"Dr Charleton cut off a piece of a dog's skin, to try, whether it would grow on again."

At the next meeting on May 25, Dr. Charleton sadly stated that:

> ". . . the dog, a piece of whose skin had been cut off and sewed on again, had got it off: he was desired to repeat the experiment at the next meeting, and think upon a way of securing the patch."

The Society met with further misfortune during the next month because after repeating Dr. Charleton's experiment on June 15th the dog was "lost to follow-up."

The minutes of June 22nd explain:

> "The dog, that had a piece of his skin cut off at the former meeting, being inquired after, and the operator answering, that he had run away, it was ordered, that another should be provided against the next meeting for the like experiment."

Nothing more concerning skin grafting appears in the Society's minutes for nearly a year when the minutes for May 24, 1665 report:

> "Mr. Thomas Coxe was particularly desired to try the changing of dog's skins."

There is no record of Coxe having performed any skin grafting experiments. The concept of blood transfusion, suggested at the same time that skin grafting was proposed in September, 1663, was of major concern to the members in 1665-1666:

> "It was suggested by Dr. Wilkins that the experiment of injecting the blood of one dog into the vein of another might be made." (May 16, 1665.)

> "Sir Robert Moray took hence occasion (March 14, 1666) to speak of the transfusing of the blood of one animal into another, attempted by Mr. Boyle, as a considerable experiment, if it could be practiced."

> "Dr. Clarke affirmed that above two years before he had endeavoured to make that experiment, but found it so difficult, that he gave it over. Sir Robert Moray intimated, that Mr. Boyle was of opinion that the difficulties of this experiment might be mastered."

Richard Lower succeeded in performing the transfusion experiments as reported in the *Philosophical Transactions* 1 #20, 353, December, 1666. Robert Boyle wished Lower to attempt skin grafting on June, 1666 but apparently Lower was too busy experimenting on blood transfusion.

The final attempt at skin grafting recorded in The Royal Society's minutes was reported on May 9, 1667, nearly four years after the idea was first proposed:

> "Dr. King gave an account of an experiment made by him of quite curring off a piece of a dog's skin, and of sticking it on again; and that he found it would not do, but that the skin mortified and was cast off. He was desired to cut off another piece of skin with the flesh on, and presently fasten it on again; which he promised to do."

With the failure of its skin grafting attempts, The Royal Society directed its energies to other scientific matters. Not until the nineteenth century would transplantation be successfully attempted, reported, and most importantly—widely accepted.

Thus, it appears that although there were instances of pre-Baronian tissue transfer, these instances do not merit consideration as replacement for Baronio's sheep as the seal of the Plastic Surgery Research Council on the basis of Owen's and Darwin's criteria.

Summary

Several cases of pre-nineteenth century tissue transfer are reviewed in light of established principles of historical investigation.

Key Words: Skin grafting; Baronio, Guiseppi; Fioravanti, Leonardo; Royal Society (London); Tagliacozzi, Gaspare.

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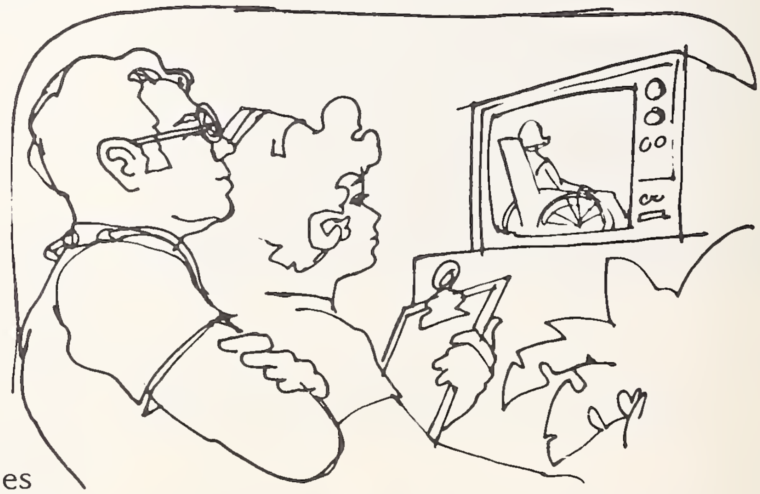

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SUPREME COURT OF THE UNITED STATES

Goldfarb et al.,
v.
Virginia State Bar et al.

(June 16, 1975)

MR. CHIEF JUSTICE BURGER delivered the opinion of the Court.

We granted certiorari [review] to decide whether a minimum fee schedule for lawyers published by the Fairfax County Bar Association and enforced by the Virginia State Bar violates § 1 of the Sherman Act. The Court of Appeals held that, although the fee schedule and enforcement mechanism substantially restrained competition among lawyers, publication of the schedule by the County Bar was outside the scope of the Act because the practice of law is not "trade or commerce," and enforcement of the schedule by the State Bar was exempt from the Sherman Act as state action.

I

In 1971 petitioners, husband and wife, contracted to buy a home in Fairfax County, Virginia. The financing agency required them to secure title insurance; this required a title examination, and only a member of the Virginia State Bar could legally perform that service. Petitioners therefore contacted a lawyer who quoted them the precise fee suggested in a minimum fee schedule published by the Fairfax County Bar Association; the lawyer told them that it was his policy to keep his charges in line with the minimum fee schedule which provided for a fee of 1% of the value of the property involved. Petitioners then tried to find a lawyer who would examine the title for less than the fee fixed by the schedule. They sent letters to 36 other Fairfax County lawyers requesting their fees. Nineteen replied, and none indicated that he would charge less than the rate fixed by the schedule; several stated that they knew of no attorney who would do so.

The fee schedule the lawyers referred to is a list of recommended minimum prices for common legal services. Fairfax County Bar Association published the fee schedule although, as a purely voluntary association of attorneys, the County Bar has no formal power to enforce it. Enforcement has been provided by the Virginia State Bar which is the administrative agency through which the Virginia Supreme Court regulates the practice of law in that State; membership in the State Bar is required in order to practice in Virginia. Although the State Bar has never taken formal disciplinary action to compel adherence to any fee schedule, it has published reports condoning fee schedules, and has issued two ethical opinions indicating fee schedules cannot be ignored. The most recent opinion states that "evidence that an attorney habitually charges less than the suggested minimum fee schedule adopted by his local bar association raises a presumption that such lawyer is guilty of misconduct. . . ."

Because petitioners could not find a lawyer willing to charge a fee lower than the schedule dictated they had their title examined by the lawyer they had first contacted. They then brought this . . . action against the State Bar and the County Bar alleging that the operation of the minimum fee schedule, as applied to fees for legal services relating to residential real estate transactions, constitutes price fixing in violation of the Sherman Act. . . .

After a trial solely on the issue of liability the District Court held that the minimum fee schedule violated the Sherman Act.* The court viewed the fee schedule system as a significant reason for petitioners' failure to obtain legal services for less than the minimum fee, and it rejected the County Bar's contention that as a "learned profession" the practice of law is exempt from the Sherman Act.

The Court of Appeals reversed as to liability. Despite its conclusion that "it is abundantly clear from the record before us that the fee schedule and the enforcement mechanism supporting it act as a substantial restraint upon competition among attorneys practicing in Fairfax County," the Court of Appeals held the State Bar immune and held the Fairfax Bar immune because the practice of law is not "trade or commerce" under the Sherman Act. There has long been judicial recognition of a limited exclusion of "learned professions" from the scope of the antitrust laws, the court said; that exclusion is based upon the special form of regulation imposed upon the professions by the States, and the incompatibility of certain competitive practices with such professional regulation. It concluded that the promulgation of a minimum fee schedule is "one of those matters with respect to which an accord must be reached between the necessities of professional regulation and the dictates of the antitrust laws." The accord reached by that court was to hold the practice of law exempt from the antitrust laws.

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*The court was satisfied that interstate commerce was sufficiently affected to sustain jurisdiction under the Sherman Act because a significant portion of the funds and insurance involved in the purchase of homes in Fairfax County comes from outside the State of Virginia.

Alternatively, the Court of Appeals held that respondents' activities did not have sufficient effect on interstate commerce to support Sherman Act jurisdiction. Petitioners had argued that the fee schedule restrained the business of financing and insuring home mortgages by inflating a component part of the total cost of housing, but the court concluded that a title examination is generally a local service, and even where it is part of a transaction which crosses state lines, its effect on commerce is only "incidental," and does not justify federal regulation.

We granted certiorari and are thus confronted for the first time with the question of whether the Sherman Act applies to services performed by attorneys in examining titles in connection with financing the purchase of real estate.

II

Our inquiry can be divided into four steps: did respondents engage in price fixing? If so, are their activities in interstate commerce or do they affect interstate commerce? If so, are the activities exempt from the Sherman Act because they involve a "learned profession"? If not, are the activities "state action" and therefore exempt from the Sherman Act?

A

The County Bar argues that because the fee schedule is merely advisory, the schedule and its enforcement mechanism do not constitute price fixing. Its purpose, the argument continues, is only to provide legitimate information to aid member lawyers in complying with Virginia professional regulations. Moreover, the County Bar contends that in practice the schedule has not had the effect of producing fixed fees. The facts found by the trier belie these contentions.

A purely advisory fee schedule issued to provide guidelines, or an exchange of price information without a showing of an actual restraint on trade, would present us with a different question. The record here, however, reveals a situation quite different from what would occur under a purely advisory fee schedule. Here a fixed, rigid price floor arose from respondents' activities: every lawyer who responded to petitioners' inquiries adhered to the fee schedule, and no lawyer asked for additional information in order to set an individualized fee. The price information disseminated did not concern past standards, but rather minimum fees to be charged in future transactions, and those minimum rates were increased over time. The fee schedule was enforced through the prospect of professional discipline from the State Bar and the desire of attorneys to comply with announced professional norms; the motivation to conform was reinforced by the assurance that other lawyers would not compete by underbidding. This is not merely a case of an agreement that may be inferred from an exchange of price information, for here a naked agreement was clearly shown, and the effect on prices is plain.

Moreover, in terms of restraining competition and harming consumers like petitioners, the price-fixing activities found here are unusually damaging. A title examination is indispensable in the process of financing a real estate purchase, and since only an attorney licensed to practice in Virginia may legally examine a title, consumers could not turn to alternative sources for the necessary service. All attorneys, of course, were practicing under the constraint of the fee schedule. The County Bar makes much of the fact that it is a voluntary organization; however, the ethical opinions issued by the State Bar provide that any lawyer, whether or not a member of his county bar, may be disciplined for "habitually charg[ing] less than the suggested minimum fee schedule adopted by his local bar Association. . . . " These factors coalesced to create a price system that consumers could not realistically escape. On this record respondent's activities constitute a classic illustration of price fixing.

B

The County Bar argues, as the Court of Appeals held, that any effect on interstate commerce caused by the fee schedule's restraint on legal services was incidental and remote. In its view the legal services, which are performed wholly intrastate, are essentially local in nature and therefore a restraint with respect to them can never substantially affect interstate commerce. Further, the County Bar maintains, there was no showing here that the fee schedule and its enforcement mechanism increased fees, and that even if they did, there was no showing that such an increase deterred any prospective homeowner from buying in Fairfax County.

These arguments misconceive the nature of the transactions at issue and the place legal services play in those transactions. As the District Court found, "a significant portion of funds furnished for the purchasing of homes in Fairfax County comes from without the State of Virginia," and "significant amounts of loans on Fairfax County real estate are guaranteed by the United States Veterans' Administration and Department of Housing and Urban Development, both headquartered in the District of Columbia." Thus in this class action the transactions which create the need for the particular legal services in question frequently are interstate transactions. The necessary connection between the interstate transactions and the restraint of trade provided by the minimum fee schedule is present because, in the practical sense, title examinations are necessary in real estate transactions to assure a lien on a valid title of the borrower. In financing realty purchases lenders require "as a condition of making the loan, that the title to the property involved be examined. . . . " Thus a title examination is an integral part of an interstate transaction and this Court has long held that

> "there is an obvious distinction to be drawn between a course of conduct wholly within a state and conduct which is an inseparable element of a larger program dependent for its success upon activity which affects commerce between the states."

Given the substantial volume of commerce involved, and the inseparability of this particular legal service from the interstate aspects of real estate transactions we conclude that interstate commerce has been sufficiently affected.

C

The County Bar argues that Congress never intended to include the learned professions with the terms "trade or commerce" in the Sherman Act, therefore the sale of professional services is exempt from the Act. No explicit exemption or legislative history is provided to support this contention; rather the existence of state regulation seems to be its primary basis. Also, the County Bar maintains that competition is inconsistent with the practice of a profession because enhancing profit is not the goal of professional activities; the goal is to provide services necessary to the community. That, indeed, is the classic basis traditionally advanced to distinguish professions from trades, businesses, and other occupations, but it loses some of its force when used to support the fee control activities involved here.

In arguing that learned professions are not "trade or commerce" the County Bar seeks a total exclusion from antitrust regulation. Whether state regulation is active or dormant, real or theoretical, lawyers would be able to adopt anticompetitive practices with impunity. We cannot find support for the proposition that Congress intended any such sweeping exclusion. The nature of an occupation, standing alone, does not provide sanctuary from the Sherman Act, nor is the public service aspect of professional practice controlling in determining whether the Sherman Act includes professions. Congress intended to strike as broadly as it could in the Sherman Act, and to read into it so wide an exemption as that urged on us would be at odds with that purpose.

The language of the Sherman Act, of course, contains no exemption. "Language more comprehensive is difficult to conceive." And our cases have repeatedly established that there is a heavy presumption against implicit exemptions. . . . Indeed, our cases have specifically included the sale of services within § 1. Whatever else it may be, the examination of a land title is a service; the exchange of such a service for money is "commerce" in the most common usage of that word. It is no disparagement of the practice of law as a profession to acknowledge that it has this business aspect. In the modern world it cannot be denied that the activities of lawyers play an important part in commercial intercourse, and that anticompetitive activities by lawyers may exert a restraint on commerce.

The fact that a restraint operates upon a profession as distinguished from a business is, of course, relevant in determining whether that particular restraint violates the Sherman Act. It would be unrealistic to view the practice of professions as interchangeable with other business activities, and automatically to apply to the professions antitrust concepts which originated in other areas. The public service aspect, and other features of the professions, may require that a particular practice, which could properly be viewed as a violation of the Sherman Act in another context, be treated differently. We intimate no view on any other situation than the one with which we are confronted today.

The State Bar, by providing that deviation from County Bar minimum fees may lead to disciplinary action, has voluntarily joined in what is essentially a private anticompetitive activity, and in that posture cannot claim it is beyond the reach of the Sherman Act. Its activities resulted in a rigid price floor from which petitioners, as consumers, could not escape if they wished to borrow money to buy a home.

III

We recognize that the States have a compelling interest in the practice of professions within their boundaries, and that as part of their power to protect the public health, safety, and other valid interests they have broad power to establish standards for licensing practitioners and regulating the practice of professions. We also recognize that in some instances the State may decide that "forms of competition usual in the business world may be demoralizing to the ethical standards of a profession." The interest of the States in regulating lawyers is especially great since lawyers are essential to the primary governmental function of administering justice, and have historically been "officers of the courts."

In holding that certain anticompetitive conduct by lawyers is within the reach of the Sherman Act, we intend no diminution of the authority of the State to regulate its professions.

The judgment of the Court of Appeals is reversed.

EDITOR'S NOTE: In Goldfarb v. the Virginia State Bar, the U. S. Supreme Court, in a landmark decision, established that the legal profession cannot hide behind the traditional concept that, as one of the professions, it is immune to suits emanating from the intent of the antitrust Sherman Act if certain of its practices in fact smack of monopoly.

The decision of course goes beyond the legal profession. It provides the basis for suits and investigations by the Federal Trade Commission against other professions, including the AMA, Connecticut State Medical Society, and the New Haven County Medical Association.

Minor editorial changes have been made. Some content has been omitted—not much. All legal citations have been omitted. But the words are essentially those of Mr. Chief Justice Burger.

Rather than give our readers the essence of the case in a paragraph or two, I have chosen to reprint the case as verbatim as possible to "educate" physicians in the court's legal reasoning, particularly since the case affects the medical profession.

J.A.F.

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Annual Convention of the AMA—Dallas, Summer 1976

The recent annual convention of the AMA in Dallas, June 26-July 1, 1976, was its 125th. The AMA conventions continue to be the most stimulating and interesting I attend. I look forward to them. They provide an opportunity to meet physicians throughout the country, to exchange opinions in the increasing nonscientific, social issues impinging upon medicine—in a close relationship for about a week. All business is conducted in one hotel in which all delegates are housed.

An annual convention is different from the semiannual in that elections take place—of the president, officers, and members to important standing committees. Elections are open, nominations can be made from the floor and frequently are, and candidates are elected by closed ballot. All offices were contested; for example, the presidency was won by John Budd, a family doctor from Ohio, over Thomas Ballantine, a delegate from Massachusetts and neurosurgeon practicing in Boston. Candidates run a real campaign, appearing before most delegations to present their views, and especially to answer questions. The AMA election process is one of the most important reasons for my believing that the AMA is the most *democratic national, voluntary* association in the country, an opinion now shared by the leaders of the Student Association and of the Interns and Residents Section. I wish more physicians, especially critics and skeptics of the AMA, could attend at least one or two such meetings.

In addition to about 150 resolutions introduced by the 256 delegates, the Board of Trustees made about 35 reports, the Council on Medical Services about 10, the Council on Medical Service Education 8, as well as others. They were distributed among nine reference committees, each comprised of five delegates appointed by the Speaker of the House. Besides the delegates, any physician, even a nonmember of the AMA, can testify before such committees. The hearings are open to the press, even to lay people. A hearing lasts as long as anyone has anything to say. A few important issues during the last several years have taken as long as two days. After such testimony, a reference committee retires into executive session to write its report, assisted by one of the AMA Legal Department. The reports are presented to the House of Delegates where debate also is unlimited; it is not unusual for reference committee recommendations to be defeated, or at least amended.

One of the obviously most difficult problems in giving a report of the meeting to our Connecticut membership is what to choose from the many resolutions and 50 reports that the AMA House of Delegates considered. I might interject that I consider communications within the profession one of our highest priorities, much more so than communication with the public. It is especially important in Connecticut because about 50% of our state society members are not members of the AMA and consequently get no information from and about the AMA. Also, the delegation, assisted by the president and president-elect who attend AMA meetings and participate in all its discussions, has not yet hit upon a satisfactory method of communicating not only with our membership and House of Delegates, but even to the Council. How can one compress the actions of the meeting of five or six days into a couple of hours discussion or a relatively short report? We are directing our attention and efforts to improving this; this report is tentative as part of that effort.

Reorganization of the Councils (the important standing committees) of the House of Delegates. This was one of the first orders of business. Councils were reorganized to promote efficiency. Though the Board of Trustees acts as a nominating committee (two for each position), the principle of open elections, nominations from the floor, and closed ballot, all vital to democratic election, are spelled out in the bylaws. I might add that as important as the Board of Trustees may be, the House of Delegates, especially by means of these Councils, plays a large role in the functioning of the AMA. Also, there is constant critical assessment of the organization of the AMA not only by these Councils, but by employing outside consulting firms—to promote efficiency and democracy within the organization.

Compensation for Utilization Review. The House adopted an amended report to "counsel physicians not to seek compensation for providing the traditional responsibility expected of them as members of review committees of institutions of which they are staff members." But, "when such committees are mandated by governments or other third parties to review patient care," it ruled that compensation for the physicians involved could legitimately be claimed. Also, "Third party payers and uninsured nongovernmental patients should accept responsibility for their share of the costs of such review."

PSRO. The House instructed its relevant Councils to continue to monitor closely the development and implementation of PSROs, and also to identify all necessary and desirable amendments to the PSRO law. It also mandated that they be listed and widely publicized in official AMA publications, and that progress reports regarding each proposed amendment be publicized at frequent intervals during the next two years.

Discrimination Against Rural Practitioners. This was an important report by the Council on Medical Service to which all socio-economic problems of the AMA are referred. The House adopted its recommendation—to emphasize "usual and customary or reasonable charges on the basis for physician payment." It also stated that "physicians, especially those who are underpaid, should bill their appropriate fee for services, even if payers reduce the amount of payment." The AMA will continue to seek amendment for the Medicare law as it pertains to reimbursement for physicians' services and recission of the "economic index" regulations, *using all available legal means.* (For those who question "what the AMA does for me," this action provides something the AMA can and does do which a state society cannot. That is, fortified by a resolution adopted by delegates of all state societies, the AMA will use its resources in Washington to negotiate with appropriate agencies of government to solve a problem common to many physicians throughout the country.)

Confidentiality of Medical Records. Seven resolutions and a report of the Board of Trustees dealt with confidentiality of medical records. The AMA will do all possible, including legal means, to insist on confidentiality for medical records, again, dealing at the Washington level.

It also strongly opposes the use of any system of universal identifiers including the Social Security number. Though the House mandated that this action be sent to all PSROs and the Department of HEW, it is not necessary because this is what the AMA normally does.

Regionalization of Obstetrical Services in the United States. The House adopted a report of the Board of Trustees which broadened the issue of obstetrics to other services also. "Regionalization of any service should occur only after consultation with all institutions, individuals, and agencies involved, and thorough documentation and evaluation of the benefits and risks that could accrue. Further, if a public or a quasi-public agency, such as a 'certificate of need' organization, requires regionalization of any service, an appropriate hearing and appeal process must be provided." The Board also will review the legal liability implication of the concept of regionalization of medical services, including obstetrics, and report at the next meeting.

Fraud and Dishonesty by Physicians. A New Jersey resolution was directed to the increasing public reports of fraud and dishonesty by some physicians which defame the profession's good name. The House urged all peer review committees to make every effort to correct such activities, or to refer to appropriate disciplinary bodies any physician who does not meet acceptable standards of professional conduct, including ethical behavior, or professional performance.

Definition of Primary Care. Once again the House could not agree on the proper designation of primary care specialty. Though there is agreement that the specialties of family practice, internal medicine, pediatrics, and obstetrics/gynecology, together with general practice, are major providers of primary care, a report of the Council on Medical Service recognizes that they are not the sole providers of medical care. Of late, even general psychiatrists, and the delegate from the Section on Ophthalmology, stated that they should be classified as primary care physicians also in that they provide an entry into the medical care system. The House referred the problem back to the Council for a report at the next meeting.

Medical Students and Primary Care. The Council on Medical Education reported on its continuing efforts to encourage medical students to enter the field of primary care and on the development of residency programs in family medicine.

It also reported on its efforts with the Liaison Committee on Continuing Medical Education to assure that physicians entering specialties will have sound knowledge of all major fields of clinical medicine prior to more specialized education.

Accreditation of Continuing Medical Education by State Medical Associations. The House reaffirmed that survey, review, and recommendation concerning accreditation of CME programs be done by state medical associations, conforming with the standards of the AMA. This was reaffirmed to prevent any possible takeover in this field by the newly established Liaison Committee on Continuing Medical Education.

Excessive Fees for CME Programs. A resolution by New Jersey struck a sympathetic cord in calling attention to growing excessive fees for continuing medical education programs. The problem was recognized as national, and was referred to the Board of Trustees for study and report at the next meeting.

National Health Insurance. No convention of the AMA would be complete without reference to national health insurance. There were five different resolutions and a report by the Board of Trustees dealing with the subject. Two resolutions requested endorsement of the concept of free standing catastrophic health insurance; one opposed all national health insurance plans thus far proposed; one asked the AMA to draft model state bills on voluntary catastrophic insurance so structured as to stimulate the private sector to market appropriate coverage.

The House, however, elected to adopt the principles that it continue its support of HR 6222 (Medicredit), containing the provision of both basic and catastrophic coverage where such is needed. To assuage those advocating free standing catastrophic coverage, especially California, the AMA recommends expanded availability of appropriate catastrophic coverage through voluntary private insurance. The Board of Trustees stated that it is reluctant to withdraw its sponsorship of its·HR 6222 bill lest it lose credibility with a substantial number of Congressmen who have lent their support to the bill. Also, it feels that the AMA should have a bill before Congress if and when other such bills are seriously considered. Also, despite a growing minority, the majority of the Board of Trustees and of the House of Delegates do not believe that the AMA should sponsor a free standing catastrophic health bill without basic health provisions.

Confidentiality of Health Care Information: Model State Legislation. One of the important contributions of the AMA is the utilization of its excellent Legal Department in formulating model state legislation on important subjects. The House adopted one drawn up for the various states on preservation of confidentiality of medical records.

National Health Planning and Resources Development Act (PL 94-641). Seven resolutions related to this new federal act were introduced. The AMA has already joined the North Carolina Medical Society and the State of North Carolina in a court proceeding to hold that the Act is unconstitutional. One resolution was especially selected in its call for a study as to the feasibility and desirability of "pursuing the establishment of a National Health Systems Agency Coordinating Committee and have state medical societies establish similiar committees and a communications network for their interrelationship." The provisions of this Act remain one of the high priorities of the AMA, and all these resolutions were referred to the Board of Trustees for appropriate action.

Prescribing Eye Medications. This called for a reaffirmation of the policy of the AMA that only physicians are qualified to prescribe or apply eye medications. It did this, and further directed constituent state societies as to the position of the AMA.

Opposition to Proposed EEOC Guidelines for Professional Licensure. Adopted: "The AMA fully endorses the principle of equal opportunity of employment and practice in the medical field, but opposes the proposed Guidelines for Professional Licensure of the Equal Opportunities Employment Council which nullify objectively determined measures of competence."

Twenty-four Hour Review. The AMA will continue "to resist by whatever means necessary the imposition of mandatory review within twenty-four hours of admission by governmental agencies and others." It was brought out that PSRO regulations do not mandate review within one working day and that the JCAH has no specific standard relative to review time.

Private Patients and the Responsibility of the Attending Physician in a Teaching Hospital Setting. The New York delegation again brought attention to this problem. The House adopted certain principles: "It opposes the mandatory delegation of the diagnosis and treatment of private patients primarily to House Staff physicians in teaching hospitals." Also, "refusal of a physician to delegate care of his private patients to the House Staff shall not be grounds for the reduction or termination of privileges."

It states, "There shall be one physician responsible for the care of the patient in the hospital and that this physician shall be the patient's own private physician; the AMA also strongly urges the JCAH to assure that its accreditation standards maintain the right of free choice by a patient to have the care provided in a hospital ordered and controlled by his or her own private physician."

Again, working at a national level, the AMA will inform and work with the Department of HEW and the JCAH to effect such principles.

Examination of Patients in Nursing Homes. The present policy of the AMA is that it "opposes any governmental mandates for examination of nursing home patients at arbitrarily determined intervals of time." It further believes that the need for periodic examinations of all nursing home patients has not been established, and that such determination of the frequency is rightfully within the purview of the attending physician based upon the medical needs of each patient. . . . The Council on Medical Service will study and report on this at the next session.

Television Violence. A report by the Board of Trustees and a resolution by California pertained to this growing national concern and problem.

The House adopted these: (1) TV violence is a risk factor threatening the health and welfare of young Americans, (2) it will commit the AMA to remedial action in concert with industry, government and other interested parties, (3) it encourages all physicians, their families and patients to actively oppose TV programs containing violence, as well as products and/or services sponsoring such programs.

Smallpox Vaccination Policy. The House voted to support the recommendation of the Public Health Service Advisory Committee on Immunization Practices that routine vaccination for smallpox for hospital and health personnel no longer be required.

Electromyoneurographic Procedures and Examination. This resolution held that "only physicians may perform clinical electromyoneurographic examinations." Sponsors of the resolution, however, were not able to convince either the reference committee or a majority of the House to adopt this policy. It felt more study should be done so it referred it to the Board of Trustees. (The CSMS Council, at its July meeting, adopted the policy. In this case, a Councilor, Dr. Victor Sonnen, explained to the satisfaction of the Council that the procedure should indeed only to be done by physicians trained in it. Unfortunately, the sponsors of the AMA resolution were not so effective as he.)

Professional Liability Countersuits. The House commended the Illinois, California, and Florida Medical Associations for support of physicians initiating countersuits against lawyers and plaintiffs who file nonmeritorious professional liability lawsuits. It further encourages other state societies to give appropriate assistance to physicians in initiating and pursuing carefully selected, meritorious countersuits. . . . (The successful countersuit of an Illinois radiologist has received national publicity. In fact, reports have it that initiation of malpractice suits in that area has dropped about 25% since his successful suit.)

JCAH Medical Audit Requirements. This dealt with the release of specific audit reports of the medical staff. Increasingly, other components of the hospital, especially lay boards, are attempting to obtain medical audits over the objection of the medical staff. This is not required by the JCAH, and such attempts should be reported to it. Specific findings of the hospital medical audit need not be reported except where corrective board action is required; a summary of the extent and character of the review of clinical care is sufficient.

Podiatrists' Hospital Staff Membership. The present AMA policy is to follow the policy set by the JCAH. Which is: After recommendations by the medical staff, a governing board may grant clinical privileges to qualified, licensed podiatrists in accordance with their training, experience and demonstrated competence in judgment. They must comply with the bylaws, and work under supervision of a staff member. The scope of their surgical procedures must be specifically defined and recommended for each podiatrist; and, they should be done under the overall supervision of the Chief of Surgery. However, in view of the increasing statutory rights and privileges of podiatrists, the subject was referred to the Council on Medical Service for study and report at the next convention.

Connecticut Resolutions. Our delegation introduced 12 of the 150 or so resolutions, numerically proportionately more than its three member delegation. Each satisfied the criterion of being of national interest as well as local to Connecticut. Each provoked lively and thoughtful discussion, and was adopted or referred for further study, except one. They will be discussed in the next issue.

Fred Fabro, M.D.

AMA's Red and Blue Books

The 1975-76 editions of the Red and Blue Books, prepared by the AMA's Center for Health Services Research and Development, have recently been published. The Red Book, *Reference Data on Profile of Medical Practice, 1975-76* (OP-463), provides data from the AMA Physician Masterfile and the Periodic Survey of Physicians and describes various characteristics of medical practice, including utilization of physicians' services, physicians' net income and expenses, physicians' fees, and selected practice characteristics. The Blue Book, *Reference Data on Socioeconomic Issues of Health, 1975-76* (OP-462), is a compilation of data describing selected socioeconomic characteristics of the U.S. health care delivery system, including characteristics of the U.S. population, financial characteristics of the health services delivery system, and medical education and licensure in the U.S. Each book sells for $4.50 or both may be purchased for $8.50. To order, write Order Dept., AMA, 535 North Dearborn Street, Chicago, IL 60610.

Regionalization in the State of Connecticut

Albert W. Snoke, M.D.

Public Law 93-641, the National Health Planning and Resources Development Act of 1974, provided a new and major stimulant for the formal regionalization of the State of Connecticut for health planning. The result was the designation by Governor Grasso and the approval of the Secretary of Health, Education and Welfare in June, 1975, of five regions as outlined in Chart 1.

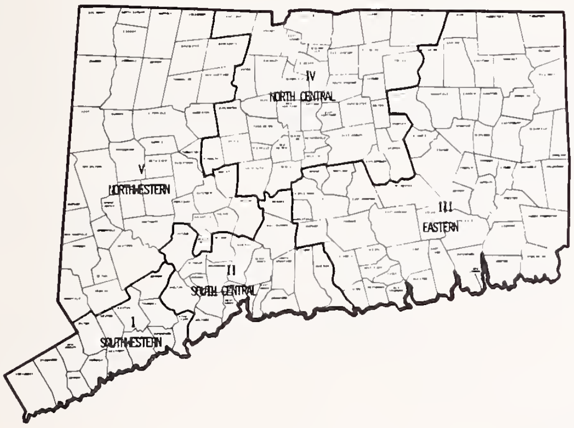

CHART I

The five Health Service Areas in Connecticut as approved by the Department of Health, Education and Welfare.

Regionalization of a state or an area for administration and service purposes has been advocated for many years in the interest of improved efficiency, institutional linkages, shared services, elimination of duplication, simplified procedures and meaningful statistics. However, only rarely have regions in a state been delineated for one purpose or agency with any relationship to others already established or being considered for other purposes. As a rule, both bureaucratic and voluntary agencies have attempted to retain their individual, traditional, regional jurisdiction and have not recognized the needs for cooperative efforts. The result has frequently been statistical and administrative chaos. This was graphically portrayed in the reports of the State Planning Council of the State of Connecticut in its May, 1969 report, describing some 59 sets of planning or administrative districts in Connecticut.

Prior to the implementation of P.L. 93-641, several substantive efforts had been made in the state of Connecticut toward the study and definition of regions for health affairs within the state. In 1968, ten regions were defined by the Connecticut Regional Medical Program (CRMP). These were developed largely on patterns of patient referrals to hospitals but also took into consideration the state Hill-Burton regions as well as those regions recognized by the state Departments of Public Health, Welfare and Mental Health. These ten regions of CRMP subsequently served as the basis for the development of the five funded and six unfunded Comprehensive Health Planning (b) Agencies.

In 1974, a departure from the CRMP areas occurred when four regions for Professional Standards Review Organizations (PSRO) were established in response to the requirements of P.L. 92-603. The boundaries of these four regions were based upon combination of county lines, corresponding to the geographical organization of the County Medical Societies of Connecticut.

Also in 1974, the Connecticut Council on Human Services (CHS) established five service areas (chart IV). These were the result of Section 8 of the Council on Human Services enabling legislation (P.S. 73-155 as amended by P.S. 74-322) which required presentation of a uniform system of sub-state districts for the planning and administration of human services. These five sub-state regions all were combinations of two or more of the 15 pre-existing regional planning areas of the state and also reflected quite closely combinations of the CRMP and CHP (b) regions. It is significant that the five service areas were for *both health and welfare* programs and reflected a growing realization of their interrelationship as well as the difficulty of having any rational separation in the provision of services at the state level.

In 1975, the requirements of the most recent Federal planning legislation (P.L. 93-641) resulted in a multiplicity of recommendations on the number and the boundaries of the health planning regions of the state to the Governor and her staff.

These varied from:

a) A single region for the state as a whole;

b) Two regions recommended by CRMP (Chart II);

c) Three regions recommended by New Haven Health Care, Inc. (NHHC) after analyzing 19 options, (Chart III);

d) Four regions that would correspond to the four PSRO regions;

e) Two variations of five regions—one, the five regions of the Human Services Council (Chart

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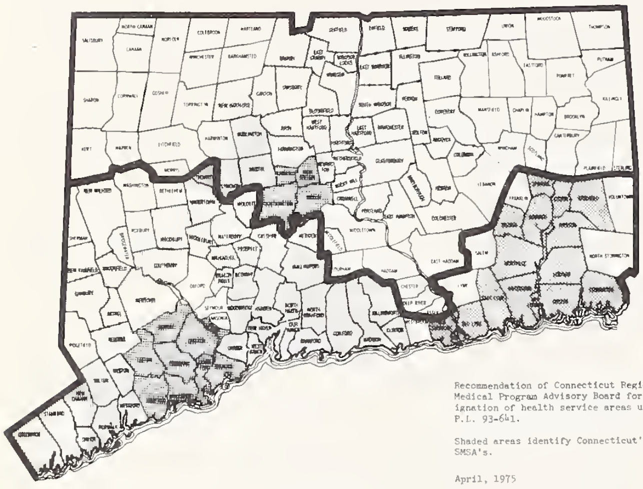
DR. ALBERT W. SNOKE, Consultant in Hospital and Health Administration; Executive Director, Yale-New Haven Hospital, 1946-1968; Professor of Public Health (Hospital Administration) Yale University School of Medicine 1946 - 1968; Coordinator of Health Services, Office of the Governor of Illinois 1969 - 1973.

IV), and the second, the five regions finally recommended by the Governor, which conformed roughly to the five funded CHP (b) agencies of the state (Chart 1).



Recommendation of Connecticut Regional Medical Program Advisory Board for designation of health service areas under P.L. 93-641.

Shaded areas identify Connecticut's 11 SMSA's.

April, 1975

CHART II

Two HSA regions recommended by the Connecticut Regional Medical Program.

The rationale by which five regions were finally recommended is not entirely clear, even though it followed an intensive effort to obtain opinions from individuals and organizations. The Governor's Task Force rejected the suggestion of two Health Service Areas on the basis that it might invite polarization. The designation of three Health Service Areas was rejected "because it was difficult to define areas that followed the Federal guidelines while insuring residents of non-metropolitan areas maximum opportunity for input into the planning process," and because "in any three area design, the population of Northeastern Connecticut would have been aggregated with either the Hartford or New Haven SMSAs." The four PSRO areas were rejected because these areas presented little conformance to the Federal law requirement.

However, the five regions as finally designated and approved were not in substantial conformance to that law either. Two areas did not meet the law's recommendations for a center for the delivery of highly specialized health services; two areas were below the recommended 500,000 minimum population and three regions substantially split the boundaries of the state administrative regions. Three of the regions also split the standard metropolitan statistical areas of the state but did little violation to the 15 pre-existing regional planning agencies. The disparity between the five state administrative regions and the recommended Health Service Areas was resolved in January, 1976 by the Council, on Human Services, recommending that the administrative regions (Chart IV) conform to the new planning regions (Chart 1).

COMMENT: To discuss the merits or weaknesses of numbers or of boundaries of Health Service Areas in the State of Connecticut is an exercise in futility unless such an analysis is accompanied by at least two fundamental considerations. *First:* consideration of program activities or objectives should be included when such regions (with sub-regions when indicated) are designated. Eight such objectives were outlined in the NHHC, Inc. report to the Governor as it explored the 19 options for sub-state regions. Some of the objectives were specified in the P.L. 93-641 legislation as "functions of the Health Systems Agencies" to be formed in the Health Service Areas; some were implied. The NHHC report recommended that all should be appropriately coordinated within the same state region for efficiency and economy of governmental and private operations concerned with the health and welfare of the people of the state. The eight objectives were:

1. Regional delineation for Health Systems Agencies (HSA) for both health planning and resource development.

2. Regional delineation for Professional Service Review Organizations (PSRO), accompanied with an extension of efforts for quality control on a voluntary basis.

3. Delineation of administrative regions for statistics and data collection for the state as a whole.

4. Assignment of responsibilities for review and comment to the Health Systems Agencies by the state regulatory body or bodies for all activities related to the regulation of health service delivery.

5. Coordinated involvement of governmental areawide or regional Comprehensive Planning Agencies with their OMB A-95 clearing house responsibilities.

6. Provision for potential coordinated, integrated or combined decentralized administration of "people service" agencies of the state in such departments as:

a. Public Health
b. Mental Health
c. Mental Retardation
d. Community Affairs
e. Aging
f. Children and Youth
g. Vocational Rehabilitation
h. Drug Control
i. Alcohol Control
j. Corrections

7. Provision for the encouragement and development of expanded regional governmental and voluntary public health and visiting nurse departments and agencies.

8. Provision for the development of potential coordinated, integrated or combined health services

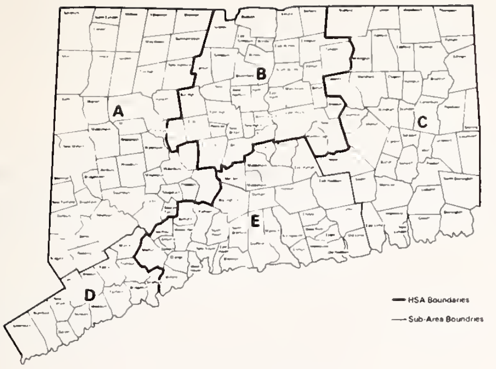


CHART III

Three HSA regions recommended by the New Haven Health Care, Inc.

through linkages on a voluntary basis of ambulatory care, acute and extended institutional care, home care and the education of health personnel. This would include a pluralistic approach to the delivery of health services, including:

a. Consortia
b. Health Care Corporations
c. Group Practices
d. Health Maintenance Organizations
e. Foundations
f. Solo Practice

These objectives reflect many of the original recommendations of the "Etherington Commission"—particularly in the association of health and welfare services that are so difficult to separate in our modern society.

Second: of greater importance to the people of the State of Connecticut than the number or the boundaries of the Health Service Areas is whether by the activities or assignments that are to be carried out by the newly formed agencies in each of the five designated regions (or by any other combination of regions in Conn.) can actually be accomplished. The purpose of the P.L. 93-641 requirement that regions be designated was solely that they might serve as the boundaries or the locale in which future Health Service Agencies (HSAs) could be organized and function effectively. It will be the ability and the performance of these HSAs in carrying out the functions required by the legislation that will determine the success or failure of this legislation. If they are unable to meet the expectations of Congress and of HEW, the legislation will be a failure and the health and welfare of the people of Connecticut as well as the providers of health services will suffer.

These concerns are not just theoretical—they are realistic. The objectives of the national legislation are constructive and appropriate for future planning and regulation of health services in the state and the nation. Voluntary self-regulation has not worked—and probably will not. However, implementation of P.L. 93-641 will be based upon the state regions that are designated and which will serve as the boundaries for the Health Service Agencies that are currently being formed. These new agencies will have substantially *increased* responsibility and authority over planning, regulation, financing and control of health services in Connecticut as contrasted to those of the previously functioning CHP(b) agencies which, in most instances, are serving as the pattern for the organization of the new agencies. Not only have the previous agencies had a rather unimpressive record over the 6-8 years that they have been in existence in Connecticut, but all current budgetary projections point toward less funds and fewer staff than they have had before.

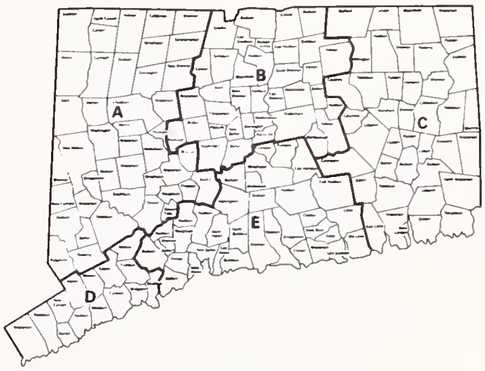


CHART IV

Council of Human Services Regions of Connecticut.

Figures for HSA of $0.25 to $0.30 per capita were being suggested as a working basis in November, 1975. Estimates of $0.16 to $0.26 are now being presented. An HSA in a region with a population of approximately 500,000 (there are three such designated in Connecticut) might expect a maximum Federal grant of $130,000. With 30% of this amount being used for overhead, at most $91,000 would be available for the direct employment of staff. The numbers and caliber of staff that would be available to carry out the agencies' responsibilities are minimal.

President Ford's budget as outlined in January, 1976, makes nebulous in many states even the projected funds that are being considered. The recommendation of the President that there be revenue sharing of ten billion dollars to the states may appear to be a generous gesture toward the encouragement of state initiative and the allocation of resources, responsibility and authority to the individual states. When each state finds that this sum includes previous Federal support from Medicaid and many categorical Federal state programs concerned with the health and welfare of people within the state as well as fiscal support for the *new* state and local programs expected to be implemented under P.L. 93-641, the states will, in all probability, find that the total Federal funds for just the existing programs within the states will be reduced. Under these circumstances, what can be expected to be the state's priority for funds for planning, research and analysis as contrasted to "people care," regulations and control? The limited funds will undoubtedly precipitate an internecine state budgetary warfare in which the current battles for HSA designation will appear as only minor skirmishes. HSAs and the state agencies may expect only modest Federal support. Planning and capacity for analyses will be early casualties.

As if the financial problems related to the HSAs are not serious enough, the very program itself is undergoing another change in administrative leadership in HEW, and the guidelines and regulations for the program are still confused and are even liable to challenge in regard to their legality, equity and practicability.

It is hoped that these rather pessimistic observations and projections are incorrect or exaggerated. Contrary to the opinions of a number of individuals or organizations, the best interests of both the people and the health providers in Connecticut would be served if P.L. 93-641 were to function successfully. Two things would appear essential: that the new HSAs would be organizationally sound and professionally capable and that they be adequately funded. It is unfortunate that many who share these concerns are hesitant to express them strongly for fear of opposing the Governor's choice, of appearing to be anti-consumer or of being vulnerable to future sanctions when the HSAs are functioning. This is just as fallacious as the reasoning that the creation of many small regional planning agencies is the only way to "insure residents . . . of maximum opportunity in the planning process."

The obvious alternative is the combining of the five presently designated areas into either two or three regions and HSAs that would incorporate all of the safeguards built into the present planning. It would enable the resultant larger agencies to be stronger and more viable. It would also break down the previously established territorial walls of presently functioning agencies which have not been particularly successful and which very likely will be underfunded and understaffed—even in comparison with their previous budgets.

This combining of regions and agencies could be done very simply in a manner that would better meet all of the requirements of the Federal legislation. Connecticut is small enough, with such ease of transportation and communications, that consumer and community input would be possible under such consolidation. Furthermore, experienced and competent staff in fewer, stronger agencies will provide a better mechanism by which local interests as well as those of the people of the state as a whole can meet the expectations raised by P.L. 93-641.

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The Capital Area Health Consortium

Whitney W. Jacobs

The Consortium Members

Altogether, these institutions have nearly 3,500 beds—roughly a third of the hospital beds in Connecticut. They have about 2,000 physicians on their staffs, approximately 40 per cent of those in the state. The hospitals are large, medium, and small, general, specialty, private, state, and federal institutions, and have a variety of religious orientations.

Unless specified, they are general, acute care institutions. Taken alphabetically, they are:

HARTFORD HOSPITAL, Hartford, 923 beds, Connecticut's largest.

INSTITUTE OF LIVING, Hartford, 415 beds, specializing in psychiatric care.

JOHN DEMPSEY HOSPITAL, UofC Health Center, Farmington, 128 beds open, more than half of its planned 212-bed capacity.

MANCHESTER MEMORIAL HOSPITAL, Manchester, 303 beds.

MOUNT SINAI HOSPITAL, Hartford, 321 beds.

NEW BRITAIN GENERAL HOSPITAL, New Britain, 436 beds.

NEWINGTON CHILDREN'S HOSPITAL, Newington, 128 beds, specializing in children's orthopedic, neurological, and rehabilitation care.

SAINT FRANCIS HOSPITAL, Hartford, 658 beds.

U.S. VETERANS ADMINISTRATION HOSPITAL, Newington, 183 beds.

All of these hospitals are affiliated or allied with the UofC medical and/or dental schools. Also, some medical or dental staff members from nearly all of these hospitals serve as part-time faculty at one or the other of the schools.

* * *

With a bow both to the past and the future typical of Connecticut, officials of eight Greater Hartford hospitals gathered at the Old State House in Hartford during Hospital Week in May, 1974, using quill pens while affixing their signatures to a historic document which bound them together.

In 1976, another hospital joined them to bring to nine the institutions making up the Capital Area Health Consortium, Inc. They lack unanimity on how to pronounce "consortium," have a variety of individual interests, and can be categorized in several different ways. Still, they are unified on certain overarching principles, just as were the nation's founders 200 years ago.

But while early American national aims were largely political, the Consortium's primary goals relate to enhancing preventive and other forms of patient care, promoting efficient use of the hospitals' joint and separate facilities, and maximizing the quality and integration of educational programs.

One of the keys to doing all these things was development of the concept of having joint staff privileges at all of the member hospitals. Implementation of this goal is at hand.

It was concern for the "providers," shown through a provision for having a designated medical staff representative from each of the member hospitals on the Consortium board of directors, which marked this group of cooperating hospitals as unique from its inception. The staffs' delegates represent some 2,000 physicians, about 40 per cent of those in the state.

HARTFORD HOSPITAL
PUBLIC RELATIONS OFFICE
80 SEYMOUR ST HARTFORD CONN 06115

Others on the board are the chief administrators and a lay trustee from each of the member hospitals. In addition, the dean of the University of Connecticut School of Medicine is automatically a Consortium board member.

Thus, with the dean and three representatives from each of the nine institutional members of the Consortium, the board now has 28 members. Under Consortium bylaws, each hospital has the right to determine, in its own way, how its administrative, staff, and trustee Consortium board members are selected.

Under the Consortium's charter, decisions of the board are binding on member hospitals, any one of which may withdraw from the "compact" on 90 days notice. In practice, however, to minimize such an eventuality, certain steps are taken before a board vote.

A variety of Consortium councils and committees —relating to staff physicians, nurses, etc., and with

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MR. WHITNEY W. JACOBS, Assistant for Publications, The University of Connecticut Health Center.

representation from member hospitals—study issues affecting all or most member hospitals. The councils receive and consider data and viewpoints from these units and work to achieve a consensus which can be recommended to the board.

Although complex, this process has proven successful so far and has been used to resolve a number of thorny issues. Each of the councils provides a forum where such questions, often highly technical in nature, can be considered in depth.

While one might write a Ph.D. thesis on the development and meaning of the Consortium, this more limited treatment will attempt to answer a few central questions.

For example, who are the institutional members of the Consortium? (For a list, see box.) How did they come to join together? What are they doing and how are they going about it? Finally, does such an organization have long-term significance?

THE INSTITUTE OF LIVING
HARTFORD RETREAT
1822

Background

Most of the Consortium hospitals can point to some cooperation with each other for at least 20 years although the beginnings were rather informal. For example, the administrators met fairly often in the early days for breakfast.

In the 1960's, most of today's Consortium hospitals formed the Hospital Council of Greater Hartford, Inc. While the Council had a small paid staff in its later years, it did not have real power and passed from the scene about the end of the decade.

It was during this same period, of course, that federal and state pressures on the health care system to avoid unnecessary duplication and competition helped bring hospitals closer together, especially those in a common region sharing mutual concerns.

It was also in the late 1960's that the UofC medical and dental schools began to make their presence known. Their evolving educational needs and growth brought on many discussions between the schools and the hospitals—and between the hospitals themselves—that were important factors in bringing about the broader concept of the Consortium.

Early in 1973, three representatives from each of the eight original hospitals began meeting monthly to see if a consortium could be formed. Representatives were from the same administrative, medical staff, and trustee constituencies as today's board. The UofC medical dean was also invited to participate. This group became a steering committee.

In only a few months the Consortium concept became reasonably firm and bylaws were written in the summer of 1973. But it took several more months to work out all the details and achieve formal agreement.

During this whole period, of course, medical schools nationally were assuming more and more responsibilities for graduate clinical education, no matter where it took place physically.

Finally, after about 18 months of detailed planning, the Consortium was born. T. Stewart Hamilton, M.D., then general director and president of Hartford Hospital, was also named Consortium president.

(He was succeeded this year as head of the Consortium by Richard E. Dunne, Jr., a member of the board at St. Francis Hospital and vice president of Alexander & Alexander of Hartford, an insurance firm.)

Soon thereafter, John M. Danielson was chosen Consortium executive director and announced firmly that "consensus," neither factionalism nor confrontation, was to be the Consortium style of operation. This proved to be true.

Governor Thomas J. Meskill took note of the new arrival, praising the hard work of all institutional members and the many compromises they had to make to bring the consortium into being.

A few days later the Hartford Courant lauded the development, saying editorially:

"The commendable effort which brought the (Consortium) incorporation into being should provide this area with the best possible medical care, hopefully at reasonable cost. Furthermore, this success should encourage other regions to make similar aims."

National attention was not long in coming. In July, 1974, “Modern Healthcare,” a McGraw-Hill magazine for managers in short-term care institutions, had a cover story on the Consortium.

The article, by Howard L. Lewis, noted that eight hospitals had signed the “Hartford Compact” and agreed to “share services, programs, staffs—and problems.”

After summarizing the board composition and noting that new services, clinical care programs, and capital construction at member hospitals must be approved by the Consortium's board, the article also called attention to a specific authority given the board in the by-laws:

It has the power “ ‘to monitor the quality of patient care provided by its members (institutions), to prescribe standards of patient care, with specific reference to preventive care and inpatient and outpatient care and, alone or in cooperation with others, to implement programs designed to attain and maintain the highest standards possible among its members in all areas of patient care.’ ”

The article also highlighted another important aspect of the new organization. It quoted John W. Patterson, M.D., Ph.D., D.Sc., then executive director of the UofC Health Center, as saying, “ ‘In a sense, an educational consortium also exists.’ ”

He was referring to the fact that the UofC medical and dental schools were already conducting undergraduate, internship, and residency training in its own and Consortium hospitals. Also, many of the Consortium hospitals had parallel graduate educational programs of their own.

MOUNT
SINAI
HOSPITAL
HARTFORD

Newly significant, in this respect, was a plan the Consortium had even before its official beginning to centralize administration of medical residency education conducted in all its hospitals in one place, the UofC School of Medicine. Soon after the Consortium was born, this was done for pediatrics. Administrative costs are prorated for participating institutions and paid by them.

The Consortium Council on Education and Research is developing parallel programs for other residency areas, such as internal medicine, surgery, and obstetrics and gynecology, in order to bring about more coordination and centralize administration for them. The rationale behind this effort is that educational administration is, after all, a medical school “bag.”

Even more trend setting is an attempt to develop a Consortium policy with respect to primary care.

Thus, the organization now says there are some 475 residency training slots in all fields in all Consortium hospitals. Recommended are plans to reduce this number to 450 by 1978. After that, half of these slots will be reserved for primary care residencies.

What's Happening

A year after the Consortium's birth, in the May, 1975 issue, “Business Week” ran an article on the organization headed “Performing Major Surgery on Hospital Costs.”

While it is questionable that the Consortium's operations in this area have been heroic, plans are being made to reduce costs. The Consortium does believe it has helped slow inevitable increases and bring more efficiency to many activities in which most hospitals engage. Samples below include some cited by “Business Week”:

* A major study to be conducted on nursing with reference to coordinating orientation, on the job training, and in-service education, using facilities of all Consortium hospitals. The aim is to cut administrative costs and broaden exposure for this group of students to a variety of patient populations and environments.
* Closed circuit TV, now linking three of the Consortium hospitals and planned to tie them all into one two-way, audio-visual network. This medium saves travel time and can be used for teaching, case consultations, and many other purposes. The main base is at the UofC Health Center, with its medical and dental schools.
* Regular meetings of Consortium social workers, nurses of all types, and people from the whole variety of disciplines represented in the nine Consortium hospital-microcosms. People from physical plant and business departments, too, are among those discovering they can share and learn from each other. Consortium is synergism, everyone finds.

The Consortium can also be a powerful ally, as St. Francis found when it sought to take a decisive step—purchase of a large neighboring former insurance company building for conversion to an ambulatory care center.

The Consortium supported this plan when the hospital made application for official permission to proceed with the idea to the Connecticut Commission on

NEW BRITAIN GENERAL HOSPITAL

Hospitals and Health Care. This backing was credited as a "strong positive factor" by the hospital after it obtained the go-ahead.

Also, the Consortium supported St. Francis when it purchased equipment enabling it to use an in-house computer to interpret electrocardiograms—the first hospital in the state to do so.

Similarly, the Consortium is supporting a plan to designate Newington Children's Hospital as the major Greater Hartford center for orthopedic, neurological, and related rehabilitation problems for patients of all ages.

Since advances in therapy have shortened inpatient periods for children with these same problems in recent years, the hospital now has specialized skills and facilities available which could be used to help adults as well.

While these instances of limited and broad cooperation between the Consortium and its members are typical, a development along different lines drew the attention of the American Medical Association's "AMA News" in October, 1975.

The "News" headlined its article, "Hospitals' Sharing Program Includes Interchangeable Privileges for MDs." At the time, this had not really taken place but was a goal the Consortium had since its beginnings.

Since then, eight of the nine hospitals have accepted amendments to their bylaws which, in summary, permit and encourage members of the active staff of any Consortium general hospital to apply for and obtain "Consortium privileges" at the other member institutions.

(For a typical amendment to a Consortium hospital's bylaws covering this issue, see box.)

The "News" quoted Mr. Danielson this way, with respect to the developments:

" 'The Consortium is going to make major health care decisions. It is important that it represent hospitals in a way that leaves the physician . . . with self determination and the freedom to practice in the public interest.

" 'But since physicians are dependent on their institution, and the institution makes many decisions bearing on care, MDs must have a great input . . . They must be able to play a positive role, rather than a defensive one.' "

newington children's hospital

Since physicians make up one-third of the Consortium's board of directors, they have the power to do this.

But Consortium bylaws do not supplant those of the member hospitals. And when a physician is in a hospital which is not his "primary" institution, he follows what Dr. Hamilton has called a "when in Rome, do as the Romans do" plan, observing the "host's" rules.

This relatively brief catalog by no means covers all of the Consortium's achievements in togetherness. But, hopefully, it does suggest some of the ways in which cooperation can help hospitals improve.

What's Ahead

As for whether the Consortium has a future, it might be helpful to look at some opinions of leaders in the health field.

Last November (1975), at the annual meeting of the Association of American Medical Colleges in Washington, D.C., the Capital Area Health Consortium—one of a handful of such institutional groupings in the country and the only one where physicians have a strong governing voice—was discussed.

During a program entitled "Consortia—New Patterns for Inter-Institutional Coordination," the main speaker was Richard D. Wittrup, executive vice president of the Affiliated Hospitals Center in Boston.

After conceding that hospitals bring a variety of motivations to forming a consortium, he made these key points:

* "The fallacy which continues to plague the regional planning movement is that responsibility for planning can be separated from responsibility for implementation. The principle being ignored is the one illustrated by the old adage that you can lead a horse to water but you can't make it drink . . .
* "Consortia, on the other hand, are planning organizations formed and controlled by institutions. Consequently, they have the potential of combining responsibility for planning and implementation by inducing the doers to plan and the planners to do."

He ventured the opinion that, "Consortia may emerge as the instrument which creates for the regional planning agency a manageable number of entities with which to deal while at the same time creating a realistic planning structure."

Those on the reactor panel at this program were George E. Cartmill, president of United Hospitals of Detroit—another consortium—and Robert U. Massey, M.D., dean of the University of Connecticut

SFH

School of Medicine, acting executive director of the UofC Health Center, and acting UofC vice president for health affairs. As medical dean, he is a member of the Consortium's board.

Both men sketched some of the history of the development of their respective consortia. Dr. Massey, an internist who is also a student of history, harked back to the early days of the Republic recalling Benjamin Franklin's remark at the signing of the Declaration of Independence:

"We must all hang together or assuredly we shall all hang separately."

But, Dr. Massey said, "The fear of hanging was not the sole motive for the signing of the Declaration . . .

"I think," he said, "some of the development of the Capital Area Health Consortium . . . resulted from an awareness that unity might provide strength in a world which, if it was not becoming more hostile, was certainly becoming more meddlesome . . ."

He concluded his remarks by saying, "Already the tough problems are being faced: providing for a more rational distribution of medical specialties; allocating medical services . . .; providing for consortium-wide staff privileges for all physicians practicing in member hospitals; tackling the problems of patient education . . . controlling costs."

This may be, he suggested, because while the Consortium provides "a means of coordinated planning . . . the planners are responsible for carrying out the tasks."

VETERANS ADMINISTRATION

1930

In January (1976), in its "Bicentennial Report," the "Journal of the American Hospital Association" took a look into the future.

In an article titled "American Hospitals: A Look Ahead," by Donald F. Phillips, field editor of the Journal, the AHA Council on Research and Development is quoted as envisioning these characteristics of the hospital of the 1980's:

- " 'Integrated into a regional network of health care services.
- " 'Providing, or participating in the provision of, much more comprehensive health care, including a variety of types of care—health maintenance, primary, specialty, restorative, and health-related custodial care—and a variety of modes of care—outpatient, short- and long-term inpatient, and home care.
- " 'Dependent upon interaction with other health care institutions for highly complex, expensive, and specialized institutional health care services.' "

There were others, but these are perhaps the most relevant to the Consortium. In the same article, our friend Mr. Cartmill of Detroit is cited.

According to the Journal, he believes "the consortium is the wave of the future," especially for urban health care, and sees this, among other advantages, in the consortium idea:

" 'In the future, under such an arrangement, every physician in any hospital can follow a patient into any hospital. Each physician will have a primary hospital affiliation and he will be surrounded by a huge group of specialists, all of whom will be on call through a medical center paging system' "

As it happens, most physicians in Greater Hartford can be paged almost anywhere in the region now, through "beepers." Perhaps the future is not so far away, after all.

A Note on the Consortium's Executive Director: *Before joining the Consortium, John M. Danielson, of Essex, was an associate dean of the University of North Carolina School of Medicine and general director of the North Carolina Memorial Hospital, both in Chapel Hill.*

Born in Assam, India, he spent his early years in that country, later returning to the U.S. He attended the University of Minnesota, where he received a B.A. degree and a master's degree in hospital administration.

He has served as director of the department of health services and teaching hospitals for the Association of American Medical Colleges in Washington, D.C., executive vice president of Evanston (Ill.) Hospital, affiliated with Northwestern University, and in *posts in hospitals in New York State and at Johns Hopkins University.*

He is a past president of the Chicago Hospital Council and the Illinois Hospital Association and served in several capacities with the American Hospital Association, the American Medical Association, the National Institutes of Health, and Regional Medical Programs.

EXCERPTS FROM A TYPICAL CONSORTIUM HOSPITAL'S BYLAWS ON "CONSORTIUM-AFFILIATED STAFF" PRIVILEGES

a. *Consortium-affiliated Staff.* Notwithstanding other provisions of these bylaws pertaining to medical staff appointments, there is established a category of medical staff known as "Consortium-affiliated Staff," which category shall continue in effect during such time as this hospital is a (Consortium) member . . .

Except as to matters otherwise provided for in this section, appointment to the Consortium-affiliated Staff shall be the equivalent of appointment to the courtesy (or comparable) staff of this hospital . . . (with) the rights, privileges and obligations of a physician attendant upon such appointment . . .

b. *Procedure for Application.* Any physician holding a primary, active or other comparable staff appointment to the medical staff of one or more Consortium member hospitals, including a provisional such appointment . . . may, in lieu of following customary appointment procedures otherwise provided for in these bylaws, make application for appointment to this hospital's Consortium-affiliated Staff. Such application . . . shall include:

(1) A certification by an appropriate official of a member hospital where primary, active or other comparable staff appointment is held, stating and describing the applicant's appointment and privileges at such hospital;

(2) Agreement by the applicant to abide by all applicable bylaws, rules and regulations of this hospital upon appointment to the medical staff;

(3) Agreement by the applicant that this hospital may from time to time obtain from the other member hospital such file information regarding the applicant as may be necessary for staff files of this hospital and may provide to such member hospital from time to time such information as may be necessary for its staff files; and

(4) Acknowledgment by the applicant that continuation of his appointment to this hospital's Consortium-affiliated Staff shall be conditioned upon continuing Consortium membership of this hospital and the member hospital referred to above and upon the applicant's continuing appointment to such member hospital's staff as set forth above.

c. *Appointments.* An application for appointment to the Consortium-affiliated Staff shall be processed in accordance with these bylaws and shall be approved if the application is complete and the applicant meets the standards required by these bylaws. If this hospital rejects an application on the grounds that an applicant does not meet such standards, the applicant may apply for a staff appointment at this hospital under customary procedures provided for in the bylaws.

Upon approval or rejection of an application in accordance with this section, the . . . (appropriate hospital official) shall promptly notify the applicant, the executive director of the Consortium, and the hospital which provided the certification for the application. Notice of approval shall include a description of the privileges to which the applicant will be entitled, and this hospital may, in determining such privileges, omit privileges held by the applicant at another Consortium member hospital or grant privileges not so held.

d. *Disciplinary Action or Termination of Appointment.* Upon appointment to the Consortium-affiliated Staff of this hospital, a physician shall be subject to all of the disciplinary rules of the hospital. Disciplinary action against a physician or termination of a physician's staff appointment shall be effected in accordance with these bylaws and such physician shall have the rights of appeal set forth in these bylaws . . .

Upon notice of a change in privileges held by a physician in the Consortium member hospital which provided the certification referred to above, this hospital may change the physician's Consortium-affiliated Staff privileges at this hospital.

A physician's appointment to the Consortium-affiliated Staff of this hospital shall terminate automatically upon receipt by the hospital of notice of termination of his staff appointment at the Consortium member hospital which provided the certification referred to above. Upon termination of a Consortium-affiliated Staff appointment for any reason, a physician may reapply for a staff appointment at this hospital in accordance with these bylaws . . .

Some Guidelines for Evaluation and Management of Psychiatric Patients

John P. Callan, M.D.

Many non-psychiatrist physicians feel uncomfortable dealing with persons suffering primarily from emotional disorders. Tending to shy away from a psychiatric diagnosis, some give a physical label to neurotic symptoms with negative results. An example of this would be calling depression "tired blood" and the resulting treatment is often as vague as the name. Therapeutic endeavors are not infrequently unsuccessful because the doctor's efforts are neither adequate nor appropriate. As a result, the patient may present repeatedly at one's office without abatement of symptoms, leading to discouragement and frustration for both patient and physician.

In depression, the doctor may correctly recognize the illness and treat it with appropriate medication whether or not the condition is given its correct name. But patients may fail to respond because insufficient amounts of antidepressant medication are prescribed. Or sometimes, insufficient time is allowed to elapse before changing the medication. Over 250 mg. of tricyclic medication daily, and as long as four weeks trial of medication, may be required before therapeutic success is seen. Few non-psychiatrists are happy prescribing more than 100 mg. of a tricyclic antidepressant per day. The strengths of the medications supplied by pharmaceutical companies is partially to blame for this. If a 10 mg. pill is manufactured, it takes 10 of them to supply 100 mg. This may seem like an enormous dose and consequently the patient is not given sufficient and fails to demonstrate a therapeutic response. In my experience, 10 mg. of a tricyclic medication is less than a therapeutic dose and is never indicated except as a placebo or for a sensitivity test.

Taking care of emotionally distressed patients requires tact and compassion which is part of the practice of medicine. Yet some doctors approach such patients with diffidence and apprehension, feeling that their problems are out of their primary field of training. Others err on the opposite side. Due to the fact that labels in psychiatry are few and for the most part more approximate than definite, they may feel that Valium*, Librium*, or other tranquilizer is the solution to all psychiatric problems. While it is true that there are only three broad diagnostic categories in psychiatry—psychosis, neurosis, and personality disorder—there are numerous subdivisions, each with its own particular set of psychodynamics and treatments.

Clinical pictures which present in the doctor's office are infinitely varied because the symptomatology is often more an expression of an individual's personality rather than due to the nature of the illness itself. When a patient comes to a family doctor with complaints of ill health, the nature of the stress should be elicited by routine history-taking, physical examination and specialized investigations. The effect of the stress can be accurately determined only by an assessment of the individual patient and evaluating the premorbid personality.

A good idea of the patient's pre-morbid functioning and ego strength can be obtained by checking a few standard developmental, sociological and vocational milestones. Most of these can be obtained from the patient's card. Questions such as follows should be asked: Has the patient completed high school? College? Is the patient employed? Is the job the patient is performing commensurate with the stated educational level? Is the patient married or cohabiting and is the relationship in satisfactory shape? The last question often must be directly asked. Almost all the patients presenting with psychiatric illness have interpersonal or marital difficulties.

It is necessary to listen carefully to what the patient says. Attention must be paid to both the expressed verbalization and the underlying innuendos. But there is more to listening than permitting the patient to ramble and do all the talking without direction. The interview must be tactfully directed and controlled to elicit the most beneficial information. That way the interview becomes most productive and little time is wasted. As the doctor listens, a systematic set of conclusions should be collected. The patient's total personality is assessed. The degree of maturity and ability to withstand stress should be judged. The mental status should be evaluated in orderly fashion. Cognitive functioning should be noted. The doctor should be able to conclude whether the patient is oriented to all spheres or not, has an elated or subdued affect, has hyperactive or psychomotor retarded behavior, and has a cooperative, neutral or hostile attitude. This enables the doctor to arrive at an accurate and precise diagnostic formulation consistent with the clinical picture. In order to arrive at an accurate prognosis,

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the current situation must be reviewed and compared with previous coping and handling of problems. Reviewing an individual's ability to cope with stress in the past is an excellent determinant in suggesting how the future will be handled.

Labels should only be applied when there is clear evidence to sustain a particular diagnosis. Sometimes diagnosis is difficult because the clinical picture is distorted by medication. Phenothiazines for a few days can markedly modify the clinical appearance of a bizarre schizophrenic if the medicine has not been discontinued for longer than a month previously.

Psychiatric diagnosis by assumption should be avoided. Doctors should not inevitably conclude that the patient must have a psychiatric illness because one has been present in the past, or the doctor can't find a physical basis for the current complaints. Symptoms presenting for the first time in adult life should not be ascribed to neurosis unless there has been a major stress. Neurosis begins in childhood and usually becomes manifest before adulthood. As I have mentioned previously, unwarranted physical labels such as "low blood sugar," "anemia," "physical exhaustion" without evidence of them sometimes panders to the neurotic with unsatisfactory results. Unscientific phrases such as those may lead to the continued search for an elusive panacea while the real difficulties are avoided. Lifelong iatrogenic illness may be sustained by the thoughtless use of such terms. Doctors should recognize that transference, an emotional feeling, is a two-way phenomena. Doctors as well as patients can develop a dependent relationship which can perpetuate ill health. They should be vigilant and guard against it. Judgmental and accusatory attitudes toward complaining neurotic patients are unwarranted. Saying "There is nothing wrong with you" only adds insult to injury, leaving the patient hurt and bewildered. The patient would not have taken the time and trouble to come to the doctor's office if nothing was wrong. What is wrong may be simple anxiety but its basis should be explored before being ignored. Scolding or upbraiding may be dangerous particularly in cases of depression. Such admonition may reinforce a punitive superego leading to adverse results and possibly suicide. Firmness is only effective when a satisfactory therapeutic relationship has been established.

Patients rationalize to explain their difficulties, and their interpretation should not be accepted without question. Overwork, the wrong job, a vindictive boss, neighborhood problems may be important stress factors but their relevance should be assessed in relation to the total clinical picture. These things rarely deserve the significance subjectively allotted to them by the patient. Neurotic patients should not be brushed aside and dismissed by saying, "I haven't got time to go into this." If the doctor genuinely does not have the time, then an appointment should be scheduled when the doctor will have the time. One thorough diagnostic interview can save many shorter but frustrating consultations.

Lying is counterproductive even though patients do not always need to know the complete and blunt truth. Sooner or later the lie will probably be uncovered and that will induce mistrust. Emotionally disturbed patients often endow extra special significance to what is said by doctors. If they find a doctor has lied to them, establishing positive rapport becomes increasingly difficult. Excusing patients from work without good reason is contraindicated. Staying home without a specific purpose can do more harm than good. If the purpose of rest is to permit the patient's defenses to reintegrate and gain time, than it can be helpful. But it should not be overprescribed.

If the patient fails to make a satisfactory response and the doctor has evaluated the case thoroughly, then referral to a psychiatrist is indicated. A positive experience with a non-psychiatrist doctor will minimize the anxiety of patients referred for psychiatric consultation. This will make the psychiatrist's task easier. Patients may choose not to follow through on the doctor's referral. But either way, the patient should feel comforted by the fact that the doctor empathizes with them and understands them as persons in addition to their clinic symptoms.

Month in Washington

The Medicare-Medicaid cost containment bill proposed by Sen. Herman Talmadge (D-GA.) could have harmful consequences on patients, the American Medical Association has told the Senate Finance Health Subcommittee.

The measure, introduced a year ago by Talmadge, was considered at a one-week hearing by the Subcommittee which the lawmaker heads. The wide-ranging bill contains scores of proposed changes in Medicare and Medicaid and calls for a major reorganization of the Government's health programs.

"In view of the continuing inflationary pressures in our economy, we are indeed sympathetic with the intent of this legislation to seek limitations upon the increasing costs of these health programs," testified Edgar T. Beddingfield, Jr., MD, Chairman of the AMA's Council on legislation. He added, however, that "arbitrary curtailments of increases in costs will have natural consequences with respect to maintaining quality and availability of care. Each element cannot be treated separately without expectation of impact on the others."

"Taken as a whole, the bill should not be enacted as it would not be in the best interests of Medicare-Medicaid patients," said Dr. Beddingfield.

HEW Secretary David Mathews, testifying earlier, had said he was not confident the overall bill would be as effective as its backer hoped. He said he had "preliminary reservations." HEW's formal position on the bill will not be made "until the next budget-legislative cycle," Mathews said, adding there isn't time this year for Congress to complete consideration of the measure.

While there is little chance of the bill advancing in this Congress, Talmadge declared in an opening statement he hoped the hearings would provide the basis "for timely Congressional action."

Various restrictions, limitations and changes in reimbursement for hospital and physician services are among the controversial features of the bill.

One provision calls for creation of a "participating physicians" category under Medicare which physicians would either accept on assignment all Medicare cases, or none. "Participating" physicians would be offered certain inducements such as simplified and speeded-up billing procedures. After asking why more efficient payment procedures cannot be put into effect regardless, Dr. Beddingfield said "the fact that inducements are necessary in order to buttress a sagging assignment rate should cause an examination" of the current "insufficient reimbursement rate (which) is the major deterrent to assignments."

The purpose of the disputed provision would be better accomplished by "making the reimbursement level under that system more acceptable and in accord with usual and customary practices," said the AMA official.

"The provision on 'hospital associated physicians' exceed the proper bounds of federal action," Dr. Beddingfield said. "It is not the role of the federal government to specify elements which constitute the practice of medicine generally or in any of its specialty fields. Nor should federal legislation, by statutory definition, attempt to divide or specify the role of the physician in the practice of medicine. Accordingly, the provisions as to anesthesiology services and pathology services should not be adopted."

He added that the section entitled "hospital associated physicians" is "misleading" and would apply to the entire spectrum of physicians' services in the Medicare program. "We strongly object to any application of any provision which would limit recognition of what constitutes physicians' services in the communities across our nation. This section would disregard normal professional relationships and establish as the proper recognition of certain physicians' income only that level which would be received by a salary. We find this premise untenable."

The bill's ban on certain contractual relationships between hospitals and professionals was opposed by the AMA. "While some individual contracts are not to be condoned," Dr. Beddingfield said, "hospital management and physicians should be free to enter into various arrangements in the interests of patient care." Hospital management and physicians must remain accountable to the public, but the action of prohibiting any percentage arrangement" should not be countenanced."

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Under new procedures announced by the HEW Secretary, HEW must now consult broad segments of the public before it prepares controversial regulations mandated by Congress or for compelling administrative need.

The issuance of regulations by HEW over the past few years has become a subject of considerable dispute, with court challenges filed by the AMA and others contending that the government had gone beyond the intent of Congress in carrying out the law.

"For far too long HEW has gone to the public in these situations only to tell them what it intends to do. From now on our first step will be to ask the people of

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Prepared by the Washington, D.C.
Office of the American Medical Association.

this country what they think we should do," HEW Secretary David Mathews said.

The Secretary said he believes strongly that the regulation process is HEW's "most intrusive channel into people's lives."

HEW will notify the public through town hall-type meetings, advertisements, public service announcements, news releases, professional and service organizations, mailings, the Federal Register, and HEW's 10 regional offices.

Following are the steps to be taken by HEW in drafting important regulations:

**Publication of a notice of intent to propose regulations which would place issues and options before the public and invites comment.

**If the Department has a preference, it will be stated clearly at the outset—an innovation.

**Publication in the Federal Register of a notice of proposed rule-making—a proposed regulation—which takes into account the requirements of the law, Congressional intent, the public's views, and the professional expertise of HEW.

The public normally will have 45 days to comment following publication of both HEW's intent to regulate and its proposed regulations. Each of these documents will include the name of a person in HEW who can be contacted for clarification or further information.

HEW also said it plans training sessions for department regulation writers so that regulations are written in clear, concise English.

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The AMA has urged the House Commerce Committee to make major changes in legislation to bring the nation's clinical laboratories under tighter federal control.

One of the most controversial provisions of the Clinical Laboratory Improvement Act (CLIA) as approved by the Commerce Health Subcommittee prohibits Medicare reimbursement for labs under any rental or lease which involves a percentage arrangement. "We particularly object to this section because it was never discussed or considered during public hearings," the AMA said in a legislative alert to constituent bodies.

"This section has far reaching contractual considerations involving physicians and hospitals," the AMA said. "In the name of openess and fairness the matters covered in this section should be dealt with separately and we ask that this section be deleted."

This disputed provision, which also covers Medicaid and Maternal and Child Health reimbursement, is similar to a key section of the Talmadge bill in the Senate.

The AMA singled out two other provisions for special concern in the CLIA bill.

One allows an exemption for a laboratory in a physician's office but only where physicians actually perform all tests and procedures in connection with the treatment of their patients. "With such a restriction, laboratories operated in physicians' offices would be forced to close down," said the AMA. "Existing law exempts laboratories operated by physicians where tests are done personally or through employees solely as an adjunct to the treatment of their own patients. This exemption should continue."

The other provision deals with revocation of a license for a number of activities, one of which is finding that the owner or operator of a laboratory has engaged in a billing practice which creates a discriminatory effect between patients reimbursed, in whole or in part, under programs receiving federal funds and patients who are not so reimbursed. "This provision apparently seeks a uniformity of fees for services by the laboratory," said the AMA. "This provision could in fact require a raising of fees under federal programs and thus would increase federal program costs. Furthermore, any provision that would state that the prohibition would be against a charge higher for a federal program than for a non-federal program would still be objectionable.

A dangerous precedent is established where the licensing authority (the HEW Secretary) can revoke a license based on fees charged to programs administered by him."

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House and Senate conferees have still not met to reach agreement on the crucial Health Manpower Bill.

The major issue to be resolved is federal controls over residencies. The House Manpower Bill approved last fall was stripped of a residency control feature on the floor of the House. A rigid and sweeping Senate control plan over allocation of residencies was watered down substantially on the floor of the Senate but the final Senate bill requires medical schools to set aside minimum percentages of residency programs for "primary care" slots.

Also important are the "payback" provisions for medical students. In this respect, the House bill is more stringent than the Senate bill. The House would require, starting in 1985, that medical students pay back, either in money or service in shortage areas, that portion of the individual student's yearly medical education subsidized by the federal government in the form of capitation subsidies to the medical schools. At present, this runs about $2,000 a year.

The comparable Senate provision requires medical schools starting in 1978 to assure that 35 percent of their first-year places are available for students who, prior to admission, have submitted applications for National Health Service Corps scholarships and have agreed to accept such scholarships.

Both bills contain provisions designed to reduce the inflow of foreign medical graduates.

The major new thrust in the two bills, in addition to the extension of capitation aid to medical schools, is to produce more physicians in the "primary care" category and to get more physicians into shortage areas.

The Administration has had strong reservations about provisions in both bills, but as they stand now it appeared unlikely the legislation would encounter a Presidental veto.

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Food and Drug Commissioner Alexander Schmidt, M.D., believes Congress must shoulder much of the blame for the controversy swirling around his embattled agency. Dr. Schmidt, who is leaving the FDA in December to become Vice Chancellor for Health Services at the University of Illinois, made clear in an interview with *AM NEWS* that he believes the persistent critics of FDA on Capital Hill, in the press and television, and among consumer groups are unfair and damage the agency's morale and efficiency.

He told *AM NEWS* the FDA has been driven into a "conservative" position in approving new drugs because of the pressures from Congressmen who believe the agency isn't tough enough with drug companies. Congress never calls a hearing when a drug is rejected, but always calls one when a drug is approved, he said, implying that a climate of fear of Congressional retaliation has pervaded FDA.

Dr. Schmidt also said he thinks the medical profession could be more supportive of FDA's position and verbally less critical.

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Students receiving federal scholarships and loans should be given a tax break, the AMA has told Congress.

Failure of Congress to continue previous exemption of such aid from taxation is proving a financial hardship on students and threatening to discourage service to the public in areas where there are shortages of medical manpower and facilities, the AMA said.

The exemption lapsed on certain student loan programs in addition to scholarship aid from the Armed Forces and the Public Health Service including the National Health Service Corps.

In a letter to the Senate Finance Committee, AMA Executive Vice President James H. Sammons, M.D., noted that with the expiration of the tax exemption, about 5,000 students in the Armed Forces Health Professions Scholarship program and about 2,700 students currently in the National Health Service Corps scholarship program are now required to pay income tax on their scholarship funds, which may include tuition, educational fees and stipends.

"The imposition of the tax on such financial assistance will impose a significant financial burden for many students now receiving such scholarships and act as a deterrent to acceptance of scholarships which carry a service commitment," Dr. Sammons said.

He pointed out that the AMA "has long advocated the use of financial incentives to encourage the development of an adequate supply of physicians to provide needed health care services."

To impose a tax on scholarships under such circumstances would defeat the purpose of the scholarship, Dr. Sammons said. "Financial obstacles should not be placed in the path of assisting those who, being qualified for medical education, have accepted a scholarship and agreed to a service commitment."

"This situation deserves the immediate attention of Congress," Dr. Sammons said.

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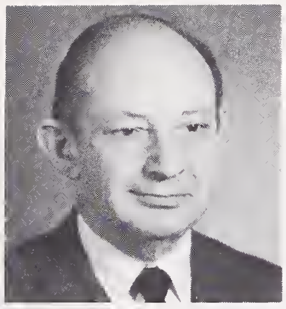
The President's Page



"The increasing cost of health care" is a phrase that we hear pronounced almost every day. It is used by many people in many different ways. It is used in various contexts, for different reasons and all too often people find in it only their own preconceived ideas and see only those facts which support their own ideas.

Can we explore the situation and come to conclusions that we all agree upon as to what our role is in this entire situation? In the first place we must separate "medical care" as an entity unto itself and not synonymous with health care. "Medical care" is only a small part of the entire "health care" situation and is the only segment of the overall problem for which we can be held accountable. We must be on guard constantly to be sure that this fact is realized and that we are not held responsible for the cost of the entire health care system. This we all accept. There may be more of a problem in agreeing upon our role in the purely "medical care" segment of the problem.

There are efforts being made by many individual groups to alter the manner in which medical care is delivered in the belief that one system or another will be able to provide the patient with a less expensive product. PL93-641 explicitly encourages this. Major union actions focus on delivery of medical care in the hope of neutralizing this as a factor in labor management relations. If this item can be controlled through governmental or legislative means so that it no longer becomes a matter of importance in concluding contracts between labor and management, it will leave the unions free to do more with the issue of wages alone. This interest is easily understood. We can even sympathize with it.

However, it does challenge us to keep the cost of medical care down to a minimum. Most of us feel that we have a good system for delivery of medical care. I think most of us feel it is the best system. It seems to me that most of our patients are happy with the care they receive from their individual physicians. Our concern, therefore, is to maintain this system and at the same time keep down the cost so that we will not put it in jeopardy.

Aside from our fees which are probably not the major factor in the cost of medical care, we must be diligent in the realm of duplication of efforts and in the matter of utilization. Quality care remains the foundation of our program and certainly nothing should interfere with this. I submit, however, that in many instances the quality of care will not suffer even if we are more circumspect in the way we use ancillary services, hospital beds, laboratory tests and the like.

PSRO's, Utilization Reviews, Hospital Cost Commissions and other similar programs address themselves to these problems. It is important that these organizations remain responsible to the physician. This will occur only if we take the lead and voluntarily see to it that the goals are met and that the guidelines are our own.

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PIONEERS IN GERIATRIC RESEARCH

Reflections from the Dean's Office

Robert U. Massey, M.D.

In a year of national elections we tend to interpret most events and issues in a political way. We fix on banners and symbolic devices even though we know that most of what goes on is only a struggle among individuals and groups, driven by ancient biological urges, swaying back and forth on the face of a history which few try to understand. The banners do represent some cultural and political strains which run so far back in our Western culture as to seem almost genetic:

I often think it's comical
How nature always does contrive
That every boy and every gal
That's born into the world alive,
Is either a little Liberal,
Or else a little Conservative![1]

The politics of the European right and left have entered American political consciousness only recently. Forty years ago only intellectuals would have described the New Deal or the Republican Party in these terms. Now each of the candidate's words is examined to see if it tends to the right or left. Test for self-interest probably is performed first, but analysis for the *dextro* or *laevo* form comes next, and is duly recorded. The political orientation of an idea seems as real as any other natural phenomenon.

Two Chilean physicians, Ernesto Medina and Ricardo Cruz-Coke,[2] have recently written of changes in medicine and health care which occurred during the Allende regime from 1970 to 1973 which they characterize as initially Social-Democrat, and later as Marxist-Leninist. They contrast the organization of medical care and certain indices of health before Allende, during his regime, and subsequent to his fall. They write of the disastrous effects of the democratization of decision making on the technical aspects of medical care. They tell of the formation of local health councils composed of representatives from unions, government, and other groups, which included only a small number from the health professions. The creation of health zones which were subdivided into health areas was seen as an effort not only to regionalize health services but also to replace, in leftist terms, the "class" structure of medicine with a countering "democratic" system. The Allende emphasis was upon social organization and democratization, and opposed the technologic and hierarchical nature of health care. In the authors' view, the Chilean health system was saved from collapse by the fall of his leftist regime and the return to the more traditional forms of professional and social organization which had characterized the years from 1952 to 1970.

Two years ago, the American authors, Waitzkin and Modell,[3] described the same experiment in history from a different viewpoint. For them, the Allende system of health care reorganization only partially succeeded because it was not accompanied by a basic change in the social order. In their view the local health councils were weak because they included 10 to 20 percent physicians who retained final decision making power. "If for no other reason, the UP (Popular Unity) experiment was necessary to show that those who hold professional dominance (as well as economic and political dominance) will not permit a real redistribution of wealth and power without a fight."

It is no news to read that a Marxist regime requires a revolution to succeed. That is part of the dogma, and Waitzkin and Modell frankly support it. But Medina and Cruz-Coke are writing from a nation whose current regime reportedly tortures political dissidents, physicians not excluded; it is not remarkable that their report reflects a bias in favor of Pinochet's government.

Nonetheless, however we are repelled by dictatorships of the right or the left, we shall find ourselves inclining either a little or very far toward the Medina-Cruz-Coke view or the Waitzkin-Modell interpretation.

It is tempting to invoke the power of government to work our will. If our intent is to oppose government interference in social or professional matters, we may join with government to drive out those who use government to force upon us their favorite reforms, and become ourselves the instigators of even more entangling legislation. The power of government is dangerous and often violent as more than half the world knows and would witness if it could. We apparently are not yet very skillful in using this power for social and private good; if there is a choice, it may be safer to leave it alone, to find other ways to do the job.

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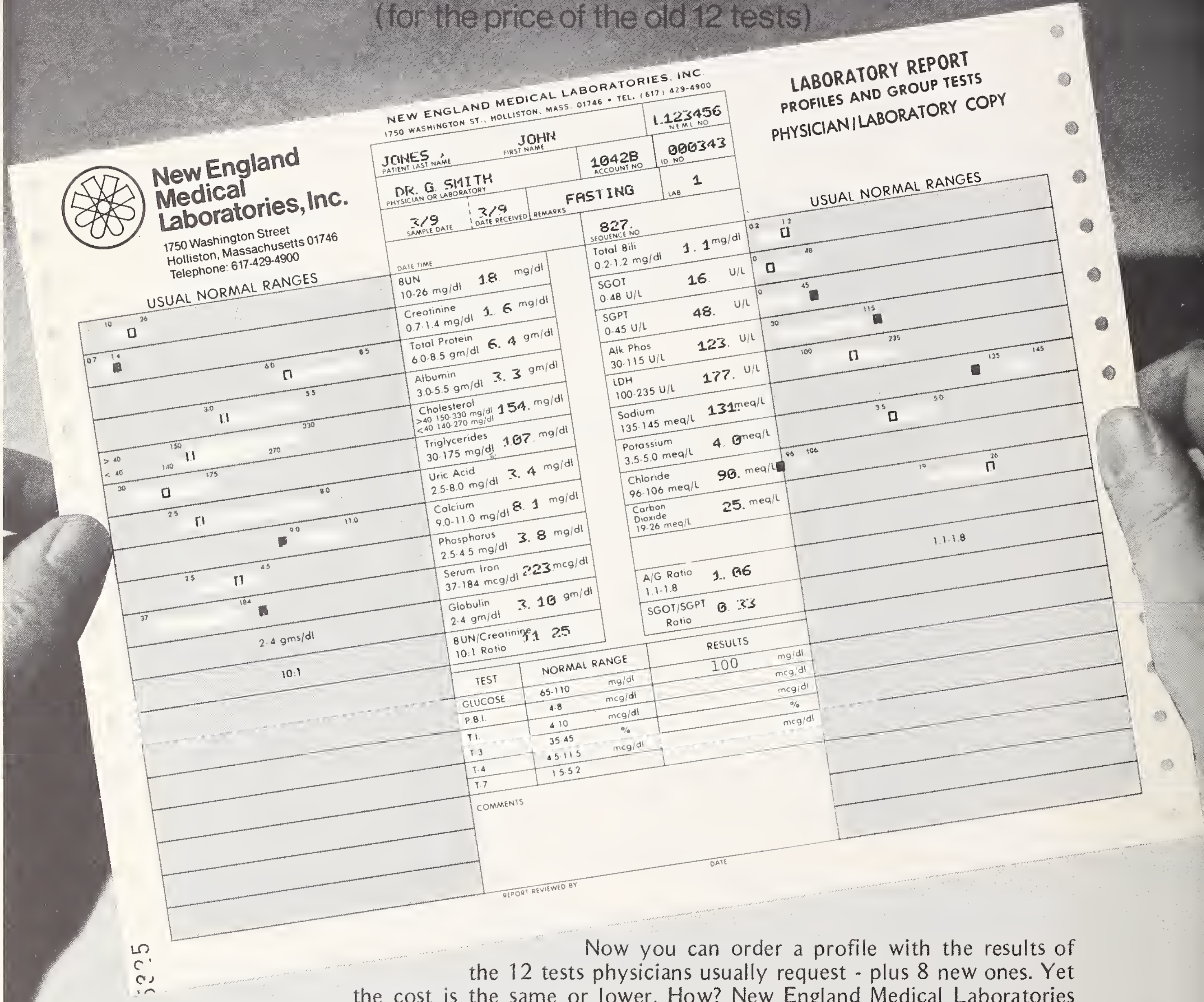

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PATIENT LAST NAME	JONES,
FIRST NAME	JOHN
NEML NO	1.123456
ACCOUNT NO	1042B
ID NO	000343
PHYSICIAN OR LABORATORY	DR. G. SMITH
REMARKS	FASTING
LAB	1
SAMPLE DATE	3/9
DATE RECEIVED	3/9
SEQUENCE NO	827.

USUAL NORMAL RANGES

BUN 10-26 mg/dl	18 mg/dl
Creatinine 0.7-1.4 mg/dl	1.6 mg/dl
Total Protein 6.0-8.5 gm/dl	6.4 gm/dl
Albumin 3.0-5.5 gm/dl	3.3 gm/dl
Cholesterol >40 150-330 mg/dl <40 140-270 mg/dl	154. mg/dl
Triglycerides 30-175 mg/dl	107 mg/dl
Uric Acid 2.5-8.0 mg/dl	3.4 mg/dl
Calcium 9.0-11.0 mg/dl	8.1 mg/dl
Phosphorus 2.5-4.5 mg/dl	3.8 mg/dl
Serum Iron 37-184 mcg/dl	223 mcg/dl
Globulin 2-4 gm/dl	3.10 gm/dl
BUN/Creatinine 10:1 Ratio	11.25
Total Bili 0.2-1.2 mg/dl	1.1 mg/dl
SGOT 0-48 U/L	16. U/L
SGPT 0-45 U/L	48. U/L
Alk Phos 30-115 U/L	123. U/L
LDH 100-235 U/L	177. U/L
Sodium 135-145 meq/L	131 meq/L
Potassium 3.5-5.0 meq/L	4.0 meq/L
Chloride 96-106 meq/L	90. meq/L
Carbon Dioxide 19-26 meq/L	25. meq/L
A/G Ratio 1.1-1.8	1.06
SGOT/SGPT Ratio	0.33

TEST	NORMAL RANGE		RESULTS	
GLUCOSE	65-110	mg/dl	100	mg/dl
P.B.I.	4-8	mcg/dl		mcg/dl
T.I.	4-10	mcg/dl		mcg/dl
T-3	35-45	%		%
T-4	4.5-11.5	mcg/dl		mcg/dl
T-7	1.5-5.2			

COMMENTS

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EDITORIALS

Regionalization Revisited

Fresh from victories in the war against crime and poverty, our social scientists joined with dissident consumers to urge passage of the Health Planning and Resources Development Act of 1974. United by the creed that health care is a right, they created a formidable lobby. The Congress and Executive Branch acquiesced gratefully as the bill seemed to offer the potential for effective cost control, improved health services and a way out of the hopelessly entangled, local planning programs. P.L. 93-641, with its regionalization plank firmly in place, was passed with only token debate. This action called for an extraordinary abdication of good sense.

Regionalization has never lived up to its promise. Successes in education and housing were limited to those experiments carried out on a small, socially oriented scale. Successes in medicine were limited to those situations where an aggressive and well financed leadership, interested in change, operated with a disinterested public served by moribund medical facilities. Since this situation does not exist in Connecticut, the more usual response to regionalization will occur. Dormant community conflicts will be awakened, old battles refought and harassing legal actions instigated. Each HSA will resemble a miniature United Nations—an organization seemly designed for the preservation of conflict.

In other pages in this issue of the *Journal,* Doctor Snoke has reviewed the history of regionalization in Connecticut, reproduced the handiwork of our modern day cartographers and evaluated P.L. 93-641. His proposed change in the HSA area format is unlikely. The five area designation was not logical—it was political. The imprimatur of HEW, even though these areas do not conform to the mandate of the law, foretells approval of future, politically motivated decisions. It is also unlikely that providers will benefit from the successful implementation of this bill. At best we will be offered civil service status, far removed from the decision making forum. This in turn would lead to a continued loss of prestige, authority and responsibility. It is a Draconian solution and the author's tone of pessimism is appropriate. The mood of many others, writing about the same subject, varies from deep melancholia to outright despair.

There is more than the potential for mischief and change in the bill. It has the potential to demolish an institution which, for all its faults, has served the nation well. Typical bureaucratic planning, with its emphasis on structure and form, could freeze the innovative nature of this same institution and reproduce the rigidity and inhumanity now present in public welfare and housing. Although the bill may be programmed for self-destruction, continuous monitoring of the activities of the HSA's is essential. This activity must be done in consort with our health care allies at all locales and all levels. As advocates, citizens and consumers, our role may well have to vary between advisor and adversary. Planning is only a tool; a means to an end. Its goals must come from outside the process. Planning is too important to be left to planners.

Guy W. Van Syckle, M.D.

Councilor-At-Large
Connecticut State Medical Society

Hospital Consortia

In the past the image of hospitals in the United States was a reflection of that of medicine—one of independence—and of competition. So long as independence and competition remained wholesome, as they usually did, much good resulted. Over the years, however, physicians became more and more dependent upon hospitals for the maintenance and sharpening of their skills; in so doing they became more and more dependent upon each other. Just as a hospital is not a hospital without doctors, the profession cannot perform today without the hospital. With advances of the past quarter-century, hospitals, like physicians, have learned the benefits of interdependence, beginning with such basics as joint purchasing and common accounting standards.

Hospitals across the country are often referred to as an industry. If so, they resemble more a cottage industry than does any other segment which commands so large a percentage of our gross national product. Because of this large and increasing percentage, especially in a time of severe fiscal constraints, outside efforts to control health care costs are increasing daily. For example, Dr. John Donnelly points out in his 1975 Annual Report of Hartford's Institute of Living that there are some seventy outside agencies which, in one way or another, seek to control the activities of that institution.

With such a situation and such forces acting upon it, it is obvious that efforts must be made to bring the hospitals and their medical staffs together wherever it is possible that by so doing the public may be better served. This better service should, hopefully, be at a cost lower than when each acts independently. The Capital Area Health Consortium is one such effort.

There have been many attempts at union in various parts of the country, some more successful than others. They range from outright mergers to holding companies to working consortia to agreements to share information. All are (or should be) built upon and not in conflict with the excellent work done to date by state and metropolitan hospital and medical associations. The Capital Area Health Consortium, if it is unique is so because of this and three other factors:

- It is an association of government and voluntary, of general and specialty, of primarily teaching and of primarily service institutions.
- It is an association which seeks to preserve rather than to merge the "personalities" of its members.
- It involves the medical staff representatives of its Board with other Trustees in all decision-making and responsibility-sharing.

Primary goals being sought in Connecticut's first such experiment are well outlined in the paper by Jacobs. They include elimination of unnecessary duplication, closing of gaps, control of costs. Equally important, they include sharing of facilities, equipment and talent. The primary goal is better care for those served. An ancillary goal is improved education for those who will be tomorrow's health professionals, beginning with physicians.

The Capital Area Health Consortium deserves observation in the years ahead. It is different from others especially in its involvement of the physician. If it succeeds it may indicate a way to preserve the best in patient care and at the same time to deal in concert with governmental forces seeking to shape the health care system in the interest of economy. To the greatest degree possible we must not jeopardize care in pursuit of the goal of economy.

T. Stewart Hamilton, M.D.

President and General Director
Hartford Hospital

The AMA

This issue reports on the annual summer AMA convention in Dallas. Though it is difficult to compress the events of a busy week-long meeting of about 150 resolutions and 50 reports into a meaningful summary, we hope that they will give some flavor and substance of the meeting to our members. Whereas two or three years ago the prevailing attitude of our members, including the 50% non-AMA members, seemed to be that they couldn't care less what happened at AMA meetings, the Council and our House of Delegates now want to be kept informed. For an AMA enthusiast, this is a welcome change in attitude. We delegates hope that we can do justice to the AMA in this mandate; county societies especially can help us by giving us at least 15 minutes at their meetings to spread the gospel and to correct misconceptions of AMA and organized medicine.

One myth, for example, was refuted in our July issue by Dr. Adrian M. Ostfeld, Professor of Epidemiology and Public Health at Yale, who, in his quiet and convincing manner, explained to a class of his students that they were wrong in believing that the AMA had authority over the policy of medical schools. The number of students admitted, the number of graduates, and the years of their schooling are not imposed by the AMA, but by the local medical school faculty that has authority over policy. In fact, as he points out, the danger is not the AMA, but the government in imposing conditions on medical schools as the price for financial assistance. It is specifically for this turn of events that the AMA has always been skeptical of government assistance or programs.

Let me make a few generalizations about the AMA, obvious to us delegates, but not to physicians at large, few of whom have ever attended an AMA convention. The House of Delegates is the policy-making body of the AMA. Let there be no doubt about this; it is no rubber stamp for the Board of Trustees or Staff. The days of a Mr. AMA such as Dr. Fishbein are over. The official spokesman of the AMA is our president, as is the president of CSMS for our Society.

Generically, the AMA is a national, voluntary association, and I have no hesitation, after some study, in saying that it is the most democratic, national voluntary association, organizationally and in practice.

I am further impressed by the influence of regionalism on the thinking of AMA delegates. Whether it is the local material they read, or the problems they confront locally, or their regional-geographic-cultural-context, regionalism particularly influences the reactions of delegates to political, social and economic issues. Though I dislike labels, but, in expectation of the reader's indulgent understanding of that dislike, I think that roughly the general concept of conservative, moderate and liberal can be used. I know of no practicing physician or delegate who is so liberal as to advocate "socialized medicine" such as there is in England or the Scandinavian countries. As I see it, the AMA and CSMS House of Delegates are quite alike in their reaction. One sees moderates and conservatives, in different degrees of reaction in opposition to governmental programs. Some "conservatives" are against all governmental programs. They would oppose them by all means; they would not cooperate. The moderate, on the other hand, while decrying government interference in health programs, will cooperate in laws, especially so that nonphysicians will not take over; they will work for change and amendment, and, especially, negotiate, police, and work against unreasonable regulations by HEW, of which there are many. Of late, the AMA is using its resources and legal department to challenge laws and regulations; it seems that in this, not only delegates but also practicing physicians at large enthusiastically endorse this change of stance.

With such a wide divergence of opinion and geography among delegates and our membership, it is surprising that so many physicians expect almost a unanimity of opinion in the AMA, rather than a majority or consensus. Also, it is not exclusive; it is an inclusive organization, admitting all licensed physicians provided there are no contrary compelling reasons. In fact, one of the fine sights in the House of Delegates of the AMA is to see the molding and formulation of a majority opinion in controversial subjects after rational and unlimited discussion. There are many members who think the AMA is too conservative; there also are many physicians who think it is too liberal.

One of the most dynamic and interesting aspects of the AMA is the increasing participation by medical students and the interns and residents section. Each has a delegate and alternate; each is given committee assignments. Each has definitely decided that the AMA is the most democratic medical organization in the country, and they have elected to work within the AMA. Within a recent year, AMA membership of the interns and residents has gone from 4,000 to 8,000.

One of the joys of AMA meetings is working within the New England delegation—with its 12 delegates, 12 alternates, its state officers and executive staffs. Though it has no unit rule, it can usually reach a consensus on almost any subject. It meets every breakfast and lunch, and has a common hospitality suite, giving our section a unity and strength that is desirable and valuable.

In concluding, I want to make a few suggestions about the AMA and about our CSMS. If anyone feels he can make it more democratic or representative, let him speak up; the process is there. It is when dissenters or a minority cannot voice an opinion or have a secret vote that we should worry. Let us recognize that there is no perfect human being, nor any perfect association or society. I believe that democracy and room for dissent are much more available in our county and state societies and in the AMA than in our hospital medical staffs.

The considered decision of the students, interns and residents to choose the AMA in which to work is noteworthy, and is one of the most constructive and encouraging aspects of and for the future of the AMA. It is significant that while we have some student interest in CSMS, there is yet no chapter or organization of interns and residents in the state—a deficiency which we in CSMS must remedy.

Fred Fabro, M.D.

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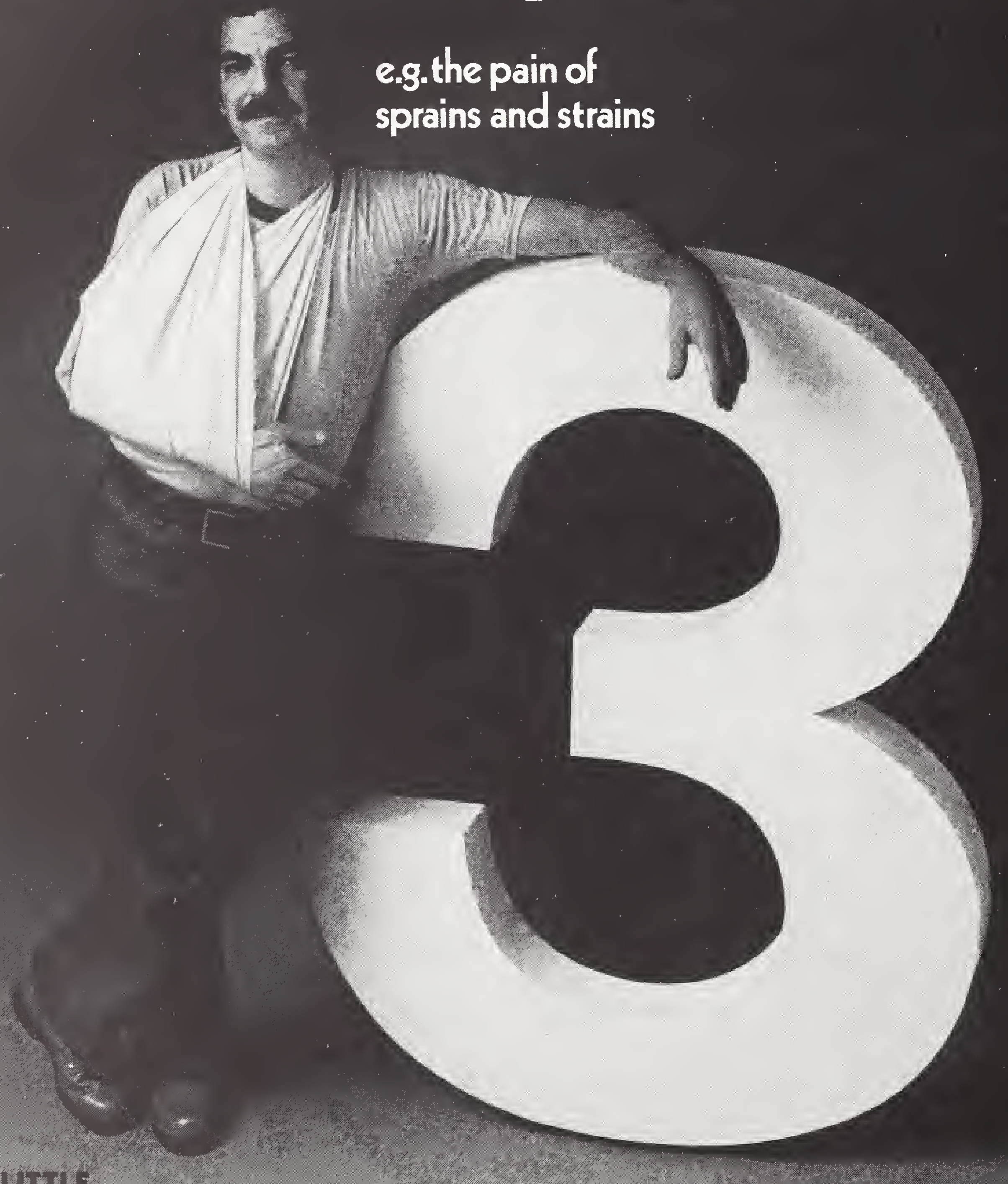

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Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

COMPLICATION OF ARTERIOVENOUS FISTULA

To the Editor: Kerstein and May presented a patient "with a six month history of a swollen, tender right index finger" and attributed this to venous hypertension complicating an *A-V* fistula for hemodialysis. *(Conn. Med. 40:*371-372, 1976). In order to clarify the explanation of "retrograde arterial flow and pressure," we examined the cited paper by Haimov *et. al.*[1] The latter authors reported four patients with massive swelling of the entire hand, developing within weeks of creating the fistula. It is indeed difficult to postulate a mechanism whereby venous hypertension resulting from an *A-V* fistula at the level of the wrist or more proximal could cause swelling of only the index finger. It would be of interest to know whether the original fistula was indeed radial-cephalic or more proximal and whether a side-to-side anastomosis had been performed. Haimov *et al.*[1] suggest, reasonably, that creation of an end-of-vein to side-of-artery fistula should obviate this unusual complication in most instances.

Frank J. Scarpa, M.D.
Derby, CT.

1. Haimov M., Baez A., Neff M., et al. Complications of arteriovenous fistulas for hemodialysis. Arch Surg 110: 708-712, 1975.

The above letter was referred to Dr. Kerstein who offers the following reply:

To the Editor: Thank you for the opportunity of allowing us to respond to Dr. Scarpa's letter.

Dr. Scarpa's point is well taken. The original fistula was side to side cephalic vein to radial artery. Certainly an end-vein to side-artery would obviate this potential problem. However, the incidence of chronic venous insufficiency, at this institution, in over 100 A-V fistulae for dialysis, is less than 5%. In fact, a review of our complications reveals it only occurred coincident with local infection and/or trauma.

The treatment is simply ligating the distal venous branch, thus, converting the side to side to an end to side. The advantages of the side to side include ease of procedure, low complication rate and excellent long-term patency. The latter is due, we feel, to the presence of the extra venous limb or extra route of flow.

Morris D. Kerstein, M.D.
Chief, Peripheral Vascular Surgery, V. A. Hospital

Carl J. May, M.D.
Ass't. Chief, General Surgery, V. A. Hospital

A DEATH IN THE FAMILY . . .

To the Editor: I would like to take this opportunity to say, to Dr. Morris Wessel, I think that your Editorial in the June issue of the Journal was most interesting and well done. I feel that the remarks in the "A Death in the Family: Who Comforts the Child" needs to be read and re-read by all of us. The fact that one never stops to think at what age the child seems to comprehend the finality of his or her loss through death. Death is so taken for granted and the bereaved child is so often overlooked by us that the child so often goes about in bewilderment. How true your quotation of fifty years ago, by Dr. Edward Trudeau, "to cure sometimes, to relieve often, to comfort always."

Charles C. Verstandig, M.D.
New Haven, CT.

BENEFIT/RISK RATIO

To the Editor: People seek medical care because their well-being is at risk. With malpractice the doctor is also at risk today. The calculation of risk is a daily necessity; air passengers accept the risks of crash and hijack, automobile users face the risks of collision. Soldiers accept the risks of battle, and primitive hunters risked their lives to feed the tribe. The prehistoric relatives of man's ancestors who were vegetarians and who ran away from confrontation—their line became totally extinct.

The great popularity of gambling shows that people even seek out risks which their daily lives do not give them. This may suggest that man descends from ancestors who were fascinated by and attracted to risk.

Any decision to be made for people who require medical care for real disease and injury can have disadvantages, and the doctor has to pick his way to find the lesser of evils. With those who may imagine or exaggerate symptoms, the possible doctor's risk of missing a diagnosis leads to more and more involvement with diagnostic procedures and therapeutic processes none of which may fully satisfy.

Into the risks of managing sickness and injury (some of it imprudently self-inflicted) lawyers work their way. And since patients find doctors today giving much attention to the technology of medical practice and less to the personalities of the sick, this creates dissatisfaction. That gives the professional fault-finders the entering wedge.

The fact that any man's possessions could be involved with injury to others led to the law of torts. That produced a need for the insurance industry which then became a very thriving business with large reserve funds. In addition when buyers of goods and services did not have all their expectations fulfilled with their purchases, complaints were forthcoming. It is no longer "let the buyer beware," consumerism has placed the risks of failing to satisfy the buyer (no matter how capricious) on the seller. The existence of insurance reserve funds plus the enterprise of lawyers combined with the irritability of consumers has now produced the litigation epidemic.

Professional reputation used to be built up slowly with modesty and dedication. Now doctors' reputations may be built up rapidly by fanfare and enterprise. In either case the bubble of reputation is not difficult to burst with the pinprick of lawsuit. And designing lawyers promote the assumption that medical care need have no risk whatever.

This situation has also produced semantical twists. Just as the leftists applied the word "liberated" to the countries they captured, the word "incompetence" gets bandied about because doctors get sued. In New England we have a legislator-doctor (whose professional preparation took him through dental school) working off his hangups toward medicine, and working up legislation against "incompetent doctors."

Lawsuits are launched against doctors who accept responsibilities and the best trained men accept the biggest responsibilities. But if any dissatisfied patient finds a lawyer who can make his gripe "actionable," the game is on. The favorite background music to keep this game going is the melody of "the incompetence of doctors."

It is demanded that medical care produce miracles, guarantee happiness, and be steeped with satisfaction. A patient's doubtful feelings, his strained emotions or an unsatisfied-with result can lead to an attack on the doctor.

But the propaganda tarbrush of incompetence is also applicable by professional people to put rivals out of the way and incompetence is often imputed to those who do not have it. Even at Socrates' trial, although incongruity was evident, the condemnation was firm. The malpractice furor has shaken up the medical profession.

When a malpractice question reaches court the event is past, and the views are hindsight. Opinions in court about the past are obviously not subject to test or trial, they can be firmly held without fear of successful contradiction no matter how baseless they may be. Any bias built by compassion then provokes the ruling "the thing speaks for itself." Human subjective judgment gets built into the body of inexorable law and this gives legal luminaries the illusion of infallibility. The judicial process on which we place faith for a stable society then generates a new tyranny.

The multiple currents in our complex society can so burden the consciousness and so provoke excessive arousal of emotions that feelings run riot. And in judicial process where there should be only cool-headed deliberation, there often is added warm-hearted compassion. But worse yet, the whole system can go awry with the application of gut-cunning and the passionate pursuit of "rights."

Some of the old built-in protections of legal process are the very cause of its distortions, and to divest archaic anachronisms from modern procedure today a legal reformation is in order. Radical rethinking is needed to avert the creeping enfeeblement of our culture because of rituals that anchor us to the past and prevent social progress with better legal methods.

It is not appropriate to say "malpractice will be with us for a very long time." Such inane resignation enunciated by a President ("it's going to be a long war") gave us the Vietnam agony. What must be avoided should then not be tolerated. The situation calls for concerted action, and doctors must organize to mount an attack on the malpractice phenomenon.

Sidney Vernon, M.D.

Willimantic, CT

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Scientific Activities

Summary of Actions
Council Meeting
Wednesday, July 21, 1976

I. Attendance

Present were: Drs. Spitz, Friedberg, Freedman, Backhus, Nolan, Grendon, Van Syckle, Hess, Canzonetti, Bradley, Cramer, Fabro, Granoff, Kamens, James, Krinsky, Sonnen, McGarry, Beck, Magram, Parrella and Middleton.

Also present: Mrs. Lindquist, Mrs. Arafeh (Auxiliary President), Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Johnson, Robinson, Harkins, Mendillo, Whalen, Ahrens, Sadowski, Vidone, Eslami, Barrett and Zlotsky.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of June 17, 1976.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Charles M. Barbour, Wyngate Lane, West Hartford
William K. McKnight, 1635 Central Avenue, Bridgeport
Andrew G. Reitwiesner, P.O. Box 814, New Fairfield
Max Taffel, Seymour Road, Woodbridge
Levin L. Waters, 333 Cedar Street, New Haven

Date of Next Meeting

The Chairman scheduled the next meeting of the Council for Thursday, August 19, 1976.

III. Old, New and Special Business

Endorsement—Recommendations of State Drug Council Report on Marihuana

It was VOTED to endorse four recommendations contained in a comprehensive report on marihuana prepared for the State Drug Council by an ad hoc committee thereof. The endorsement by the Council had been recommended by the CSMS Committee on Drug Abuse Educational Programs. It was further VOTED to refer the endorsed recommendations to the Committee on Legislation for information and guidance. In brief, the recommendations contain background comments and guidelines concerning Connecticut statutes dealing with marihuana and a number of changes that might be sought through legislative action at future sessions of the General Assembly.

Progress Reports—"Swine" Virus Immunization Program

It was VOTED to receive as information several commentaries, communications and reports which related to the proposed nationwide immunization program against the swine virus (now designated as "New Jersey 'A' ") and some of the problems that are being encountered in drawing up a definitive plan for its implementation. Among the problems are: Insurance or indemnity coverage for vaccine manufacturers; insurance or indemnity coverage of providers (including physicians) who administer the vaccine, especially in a public setting; difficulty in establishing optimum dosage for different age groups; etc. A communication received from the Public Health Service Center for Disease Control explained why Victoria "B" vaccine will not be used in bivalent vaccine made available to public and private outlets (only Victoria "A"); i.e., Influenza B is not a major contributor to mortality from influenza; B vaccines seem to be less effective than A vaccines; and B vaccine causes more reactions than A. While under discussion, it was VOTED to table action on the recommendation of the Committee on Public Health concerning professional charges for vaccine administered in a private office setting. It was also VOTED to table further discussion of the terms and conditions under which physicians might volunteer their services as participants in public immunization programs.

Finally, it was VOTED to request the Committee on Public Health to report to the Council at its next meeting on *all* aspects of the New Jersey "A" immunization program in Connecticut as presently being developed by the State Department of Health in accordance with federal directives.

Communication from State Advisory School Health Council

It was VOTED to receive as information a letter from the subject School Health Council which advocated that the Society take the lead in developing a legislative program to achieve the establishment of mandatory health education programs in the state's school system, and suggested that the Society also take the initiative in planning and conducting "some kind of public forum or workshop" that would engender broad based public support for the enactment into law of such legislative proposals. It was suggested further that the Society seek the sponsorship and cooperation of such agencies as the CSMS Auxiliary, the PTA State Council and the Connecticut Association for Health, Physical Education and Recreation in the planning and conducting of said "forum or workshop."

It was further VOTED to approve a recommendation of the Committee on Public Health that the Council create an "Ad Hoc Committee to Plan and Conduct a Forum on Health Education" and appoint such an ad hoc committee as follows: Kenneth F. Brandon, Hartford, chairman; Franklin M. Foote, Wethersfield; Leonard Parente, Hamden; James H. Root, Jr., Woodbridge; Martin W. Sklaire, Madison; and Gert Wallach, Waterbury.

Request for CSMS Co-Sponsorship—Symposium on the Geriatric Patient

It was VOTED to receive as information a communication from the chairman of the Society's Committee on Continuing Medical Care and Rehabilitation, Ian R. Lawson, which outlined the program for a symposium on "The Socio-Medical Management of the Geriatric Pation" (Sheraton Hotel, Hartford, 9/8/76) and requested that the Society join with the Connecticut Academy of Family Practice and the American Geriatric Society as a co-sponsor of the symposium. It was further VOTED to approve such co-sponsorship. CSMS financial support is not requested. CME credits will be granted.

Summary Report—Representative, Commission on Hospitals and Health Care

Sidney L. Cramer, Hartford, who completed his term as the Society's representative on the subject Commission as of June 30, 1976, reported briefly on his service as a Commission member, thanked the Council for giving him the opportunity to so serve, and extended congratulations and all good wishes to his successor, David A. Grendon, Sharon. The Council, in turn, VOTED to thank Dr. Cramer for his service with the Commission as a representative of the Society and to commend him on the manner in which he had discharged his duties and responsibilities.

Reports of AMA Delegation—Dallas Meeting, AMA House of Delegates

It was VOTED to receive as information three published documents and a series of brief verbal reports presented by members of the Connecticut Delegation, all having to do with various matters considered, and actions taken, by the AMA House of Delegates at Dallas, Texas, 6/26-7/1/76. It is anticipated that a summary of actions felt to be of special interest to CSMS members may be published and distributed via the Journal or some other Society publication.

Report—Dallas Meeting of Representatives of State Societies Having Aetna Programs

It was VOTED to receive as information a report on the proceedings of this meeting prepared by Mr. Tomat, Assistant Director, who attended as a representative of the Society. In brief, the report indicated that the exchange of information and experience between representatives of the eight state medical societies that sponsor Aetna-administered professional liability insurance programs was considered to be of great value by all participants—including representatives of Aetna. It appears that, in most respects, the Connecticut program is considerably more advanced than the others, and that present premium rates in Connecticut are the lowest among the eight programs.

Report—Liaison Committee with Department of Social Services

It was VOTED to receive as information a report of the subject Liaison Committee which consisted of: (a) A letter from the Department's Director of Health Services to Charles Polivy, Committee chairman, dated 6/23/76, that states that the Commissioner is agreeable to complying with the request of the CSMS House of Delegates (4/28/76) that when data on Medicaid payments made to named physicians are released to the media, they will be accompanied by additional information such as the demographic nature of the physician's practice, the types and numbers of services he renders and other factors relating to his treatment of Title XIX beneficiaries; and (b) the minutes of a 6/10/76 meeting of members of the Liaison Committee with representatives of the Department at which it was learned that the 10% cutback in physicians' payments, proposed late in 1975, has been abandoned; that an increase in the level of payments appears quite possible in the next fiscal year (starting July 1, 1977); that "Guidelines for Certain Specified Surgical Procedures" ("second opinion" requirement) were reviewed; and that overutilization of Medicaid services remains a serious problem.

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Medicine today is in the spotlight, subjected to all kinds of scrutiny. Your control over patient therapy is being monitored, judged and occasionally abrogated, sometimes by unknown third parties.

The worry is that in the wake of this focus, the relationship between you and your patient will be weakened, without offsetting benefits. Consider three examples:

Drug substitution In most states, pharmacy laws, regulations or professional custom stipulate that your non-generic prescriptions be filled with the precise products you prescribe. But in the last five years, a dozen or more State laws have been changed, permitting the pharmacist in most cases to select a product of the same generic drug to fill any prescription.

Ironically, this dilution of physician control has taken place against a background of growing evidence that purportedly equivalent drug products may be inequivalent, since neither present drug standards nor their enforcement are optimal. In fact, the FDA itself says it has not enforced the same standards for hundreds of "follow-on" products that it had applied to the original NDA approvals. Thus physician control over patient therapy is being eroded with a risk that patients may be exposed to drugs of uncertain quality.

The major advertised claim for substitution is reduced prescription prices for consumers. Yet no documentation of any significant savings has been produced.

MAC Maximum Allowable Cost, MAC for short, is a Federal regulation designed to cut the Government's drug bill by setting price ceilings for drugs dispensed to Medicare and Medicaid patients. Unless the prescriber certifies on the prescription that a particular product is medically necessary, the Government intends to pay only for the cost of the lowest-priced, purportedly-equivalent, generally-available product. The effect of the program may be that elderly and indigent patients will be restricted to products which someone in Washington believes are priced right. Practicing doctors will have little to say about administration of the program, since Government will have absolute authority to make its choices stick.

The drug lag The future of drug and device research depends upon a scientific and regulatory environment that encourages therapeutic innovations. The American pharmaceutical industry annually is spending more than $1 billion of its own funds and evaluating more than 1,200 investigational compounds in clinical research. Disease targets include cancer, atherosclerosis, viruses and central nervous system disorders, among others. But there is a major barrier to the flow of new drugs to your patients: The cost of the research is more than ten times what it was, per product, in 1962; and whereas governmental clearance of new drug applications took six months then, it commonly consumes two years now.

The FDA needs adequate time, of course, to consider data. But it is equally clear that the present approval process contributes to needless delay of needed therapy. That's why the increased efficiency of the drug approval process is vital to all our futures.

If these issues concern you, we suggest that you make your voice heard—among your colleagues and your representatives in State legislatures and in Washington.

It could make a difference in your practice tomorrow.

P·M·A

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W., Washington, D.C. 20005

Communication—Connecticut Society of Physical Medicine

It was VOTED to receive as information a communication received from CSPM which requested that "the Society take a stand" with respect to the performance of electroneuromyography by other than licensed physicians who have been trained in the performance of the procedure. After lengthy discussion, the Council VOTED to adopt a resolution presented in the communication as follows: "That clinical electroneuromyographic procedures and examinations be performed only by physicians licensed to practice medicine in all its branches, and trained in these procedures."

Communications—Connecticut Podiatry Association

It was VOTED to receive as information several communications received from the president of the Connecticut Podiatry Association which proposed the establishment of ongoing liaison between the Society and CPA, and a letter to the CPA president from Kenneth F. Brandon, chairman of the Committee on Legislation and of the Committee on Allied Medical Services, which proposed that such liaison be established through CPA participation in the work of the latter Committee. It was further VOTED to approve the proposal for liaison offered by Dr. Brandon and to so advise the president of the Podiatry Association.

CSMS Representative to AMA Conference on Health Planning

It was VOTED to receive as information notice from AMA that a subject Conference on health planning under PL 93-641 will be held in Chicago, Ill. on August 23, 1976. It was further VOTED to request Charles M. Krinsky, New London, to represent the Society at the Conference and to authorize his reimbursement for usual expenses incurred by his attendance thereat.

Report—Subcommittee to Study and Revise the Bylaws

(a) *Suggestions for "Unified Dues":* VOTED to approve the recommendation of the Subcommittee that none of the four suggestions for "unified dues" (offered to a Reference Committee as alternatives to "unified membership" at the 4/28/76 meeting of the House of Delegates) be pursued toward implementation; that, instead, "the Council continue to pursue and promote the concept of 'unified membership' among the members of the Society until such time as the membership, in the majority, shall support the adoption by the House of Delegates of a direct amendment to the Bylaws such as was presented to the House on 4/28/76." It was VOTED to table a motion that a "unified membership" amendment be introduced by the Council at the next meeting of the House of Delegates.

(b) *Proposal to Limit Voting in Elections of AMA Delegates and Alternates to AMA Members:* VOTED to approve a recommendation of the Subcommittee "that the Council *not* propose an amendment to the Bylaws which would limit voting in the elections of AMA Delegates and Alternate Delegates to members of the CSMS House of Delegates who are AMA members."

(c) *Proposed Formation of CSMS "Business Sessions" for Medical Students and House Officers:* VOTED to approve the recommendation of the Subcommittee "that the Council request the Committee on Cooperation with the Medical Schools of Connecticut to seek to develop and report a plan to form a CSMS 'business session' for students attending the Yale and U Conn medical schools but not excluding CSMS Student Members attending out-of-state schools," and that formation of a similar "business session" for house officers training in Connecticut hospitals be considered at a later time.

(d) *Proposal to Identify AMA Members in CSMS Membership "Roster":* VOTED to approve a recommendation of the Subcommittee, as amended, "that identification of AMA members in the CSMS membership 'Roster' be made by means of placing an asterisk beside the name of each such member, beginning with the 'Roster' for 1977".

The Council will report on the foregoing actions to the next meeting of the House of Delegates.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on July 21, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

WOMAN'S AUXILIARY

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Connecticut's Finest Hours

What the AMA Auxiliary needs is Betty Gardner.

—*Dr. Norman H. Gardner*

Bicentennial 1976 provided the moment, the place, the person for the realization of an idea whose time had come.

On Wednesday, June 30, at 11 a.m., time literally stood still for a woman. In the sandwich-packed Grand Ballroom of the Statler Hilton, Dallas, surrounded by her beloved family, her devoted minister, life-long friends, the Connecticut delegation, and representation from the 50 United States of America, New England born and bred Mrs. Norman H. Gardner was installed by Mrs. Howard Liljestrand, national past president, as the fifty-fourth president of the AMA Auxiliary, the first national president from Connecticut.

In her inaugural address, Mrs. Gardner set the mood for unity in working together as volunteer auxilians for the common cause of medicine and for becoming informed, community resources on matters that affect the practice of medicine.

She stated: "We must decide where we are, where we want to go, and how we will get there. Only as we are unified in our directions will we achieve any results worth reporting next year."

Mrs. Mehadin K. Arafeh, president of the Connecticut State Medical Society Auxiliary, extolled Mrs. Gardner's virtues—"courage and strength, steadfast conviction and vision, talent and compassion, sincerity and devotion"—and credited this modest, petite woman as follows: "She has inspired us in Connecticut and has never forgotten us back home. We are happy to share her at the national level."

A moving tribute to Mrs. Norman H. Gardner was made by Mrs. F. Erwin Tracy, life-long friend, when she graciously presented her with gifts from the CSMS, Middlesex County Medical Association Auxiliary and the MCMA.

Dr. Hilliard Spitz, president of CSMS, appropriatly referred to the Gardner family as the "number one medical family of our state" when he presented to Mrs. Gardner a generous check from the CSMS and a bouquet of roses from the Council of the New England State Medical Societies, tokens of the respect and esteem of the givers.

Sponsored by CSMS Auxiliary, the 11:30 a.m. "no frills" reception honoring Mrs. Norman H. Gardner and the 1976-1977 board of directors was arranged by Mrs. Tracy, chairman of the Committee to Honor Betty Gardner. The Connecticut delegation, dressed in white with red, white, and blue corsages, acted as official hostesses in an atmosphere of warmth, dignity, and elegant simplicity matched only by the happy smiles and friendly, firm handshakes of Mesdames Gardner, Arafeh, and Tracy in the reception line. Connecticut's pre-packaged, Bicentennial souvenirs (Declaration of Independence, quill pen), distributed by the delegate-hostesses (Mesdames Roch, Tracy, Arafeh, Wirth, delegates; Concannon, Czarsty, and Stubblefield, alternates; Andrus, Gilman, Spitz, Sullivan, auxilians), were enthusiastically received.

Connecticut's finest hours culminated at the Fairmont Hotel's plush International Ballroom at the lovely evening reception, co-sponsored by the Connecticut and Virginia Medical Societies, in honor of the new national presidents, Mrs. Norman H. Gardner and Dr. Richard E. Palmer.

In her congratulatory telegram, Governor Ella Grasso expressed it best: "Your efforts have only enhanced the work of your auxiliary, and the future looks bright under your leadership."

Ethel D. Wirth
(Mrs. Michael N. Wirth)

OBITUARY

Kurt Oppenheimer, M.D.
1897—1976

Dr. Kurt Oppenheimer died April 29, 1976 at the age of 79.

He was a general practitioner in the New London area since 1941. Dr. Oppenheimer was a former president of the medical staff at the William W. Backus Hospital. Besides serving as president of the Backus medical staff, Dr. Oppenheimer was active in the American Heart Association and Planned Parenthood.

He was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association.

Kurt Oppenheimer was a man of total dedication to his creed, his family and his profession.

His religious beliefs were sincere, self-searching and unbiased. They brought him peace of mind, and answers to many endured hardships, particularly when he was abruptly wrenched from his homeland, from the security of an established life, and forced to build an entirely new existence.

As a husband, father and grandfather, he set a standard to be admired and emulated. His grandchildren worshipped him—a vanity in this day and age.

Coming to this country a well-trained, successful physician, he faced the barrier of a new language and medical terminology. He plunged into the hard work and frustration involved in overcoming this handicap and eventually was granted a license to actively engage in his profession, for him a great accomplishment.

Going into practice enthusiastically, willing to work day and night, he soon became a valuable adjunct to the community, attracting a host of patients to whom he was intensely devoted, and to whom he never said "no." Keeping abreast of medical advances, he offered top-flight care and advice. He remained a modern physician who retained old-fashioned standards of loyalty and self-sacrifice.

Having had the privilege of knowing "Oppie" in the name of his fellow physicians, I humbly and greatfully pay tribute to a great man and a remarkable doctor of medicine.

Frederick C. Barrett, M.D.

In Memoriam

Alexander, Stanley J., New York University Bellevue Hospital 1932. Dr. Alexander was a practicing internist in the Middletown area. He was also honorary senior attending physician in cardiology at Middlesex Memorial Hospital. He was a counseling physician in chest diseases at Connecticut Valley Hospital. He served as a member of the board of directors of Middlesex Memorial Hospital for six years and was a member of the Conversational Club at Wesleyan University. Dr. Alexander was a member of the Middlesex County Medical Society, the Central Medical Society, the American and Connecticut Thoracic Society, the Connecticut State Medical Society and the American Medical Association. Dr. Alexander died June 4, 1976, at the age of 69.

Baker, Philip G., University of Vermont 1933. Dr. Baker was a general practitioner in the Winsted area. He served as captain in the Medical Corps during World War II. He was a former staff member at the Winsted Memorial Hospital and a member of St. Andrew's Lodge of Masons in Winsted and of Temple Beth Israel in West Hartford. Dr. Baker was a member of the Litchfield County Association, Connecticut State Medical Society, American Medical Association and a fellow of the American Academy of Family Physicians. Dr. Baker died June 27, 1976, at the age of 69.

Bakunin, Maurice I., Jefferson Medical College 1932. Dr. Bakunin was a resident of Bridgeport for 60 years. He served as captain in the medical corps during World War II. He was past chief of obstetrics and gynecology at American college of physicians and surgeons and a member of the American Medical Association. He was a commissioner on the Greater Bridgeport Transit Board for the City of Bridgeport, past vice-president of Congregation Rodeph Sholom, past president of B'nai B'rith, and treasurer of the North End recreational club. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Bakunin died June 6, 1976, at the age of 69.

Dinolt, Robert, University of Vienna 1930. He was a practicing Otolaryngologist in Putnam, and was on the staff of Day Kimball Hospital. Dr. Dinolt was a member of the American Academy of Otolaryngology and the American College of Surgeons. He was a fellow of the Royal Society of Health and a member of the Perquet Society. Dr. Dinolt was chairman of the City of Putnam planning commission from 1955 and chairman of the town planning commission since its inception in 1956 and was a U.S. Army Veteran of World War II. Dr. Dinolt died July 20, 1976, at the age of 69.

Fiske, Madeline, Boston University School of Medicine 1927. Dr. Fiske was a practicing Obstetrician and Gynecologist in the Ridgefield area. She was president of Stamford Medical Society 1962-63, Assistant Physician on Staff OB-GYN Stamford Hospital and Associate Physician St. Joseph's Hospital. Dr. Fiske was a member of Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Fiske died June 4, 1976, at the age of 76.

Fortier, Norman L., McGill 1943. Dr. Fortier was a practicing ophthalmologist maintaining offices in Hartford and was on staff of Hartford Hospital. He was a member of the American Medical Association, the Hartford County Medical Association, the Connecticut State Medical Society, Section of Ophthalmologists, the New England Ophthalmology Society and the American Association of Ophthalmologists. Dr. Fortier died July 16, 1976, at the age of 58.

Hunter, Paul, University Verne, Switzerland 1955. Dr. Hunter was a practicing physician in Devon, Connecticut. He was a staff member of Milford Hospital and Danbury Hospital, New Haven County Medical Association and the Connecticut State Medical Society. Dr. Hunter died June 28, 1976, at the age of 55.

Monti, Lyle John, University of Vermont 1941. Dr. Monti had a private practice in urology in New Britain from 1948 to 1968 before joining the Staff of Physicians at New Britain General Hospital. He was a World War II veteran of the Army Medical Corps. Dr. Monti was a certified American Board Urologist and a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Monti died on July 16, 1976, at the age of 59.

Neth, Edward J., McGill Medical School, 1953. Dr. Neth was a practicing cardiologist in the Fairfield area since 1958. He was attending physician of medicine at St. Vincent's Hospital and St. Joseph's Manor and was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Neth died April 14, 1976, at the age of 49.

Scully, Michael R., Columbia P & S, 1941.
Dr. Scully was a general surgeon in the Fairfield area since 1946. He had a private practice in Milford and Bridgeport and was a part-time general surgeon in the emergency room of the Milford Hospital. He also was on the Staff of St. Vincent's Medical Center. He was a Navy lieutenant commander during World War II and saw extensive action in the South Pacific while serving as chief medical examiner aboard the destroyer USS Guest. Dr. Scully was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. He died in a fire at his home May 2, 1976, at the age of 61.

Smith, Fred M., University of Vermont 1911. Dr. Smith was a practicing general practitioner and had an office for 50 years in Willimantic and retired from practice in 1963. He was a veteran of World War I serving as a captain in the Medical Corps. He was a member of Windham County Medical Association and the State Medical Society. Dr. Smith died July 6, 1976, at the age of 90.

Teuscher, William P., Tufts 1932. Dr. Teuscher was a general practitioner who had a private practice in Westport. He served on the staffs of Bridgeport and Norwalk hospitals. Dr. Teuscher retired from practice in 1957. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Teuscher died July 2, 1976, at the age of 70.

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Surgery (Cardiovascular-Thoracic): Board certified in general surgery. Board eligible in thoracic surgery. Connecticut license. Available immediately. Wishes to locate permanently in Connecticut community. Complete resume on file with CSMS.

Surgery (General): Available now. Board eligible. FLEX. Group or institutional practice. Wife has completed 3 yr. residency in anatomical pathology. Chandy Samuel, M.D., 408 Prospect Avenue, Syracuse, NY 13203.

Emergency Room Physician: Available July 1976. Completing three year program at the Sinai Hospital in Southfield, Michigan. Graduate of the University of Buenos Aires in Argentina. 28 years old. FLEX. Michigan License. Mario A. Roskind, M.D., 22307 LaSeine, Southfield, MI 48075.

Occupational Medicine: Family Physician interested in part time position. 8 years of experience with industrial firm. Fairfield County. Contact CSMS.

Family Practice: Sat for FLEX in June 1976. 32 years old. Available immediately. Trained in India, in Chicago, Illinois and in Pennsylvania. R.R. Sheth, M.D., #104, 8A Richland Lane, Camp Hill, PA 17011.

Pediatrics: Connecticut license. Available October 1976. Completing training at Reidsville, Georgia. Internship programs at St. Raphael's Hospital in New Haven, and at University of Nebraska and Royal Oak, Michigan. Group or institutional practice. H.U. Subhani, M.D., P.O. Box 910, Reidville, GA 30453.

Urology: Available immediately. Solo or associate program. M.D. from Georgetown; internship and residency at Vanderbilt. Research and residency at University of PA. 33 years old. Married. William F. Badbois, M.D., 323 Walnut Hill Lane, Havertown, PA 19083.

General Medicine: Part time position desired. Greater Hartford area. Contact CSMS.

Anesthesiology and Respiratory Therapy: Available now. Board eligible. Connecticut License. 49 years old. Presently in practice, but wishes to relocate. John A. Prescott, M.D., 45 Thacher Brook Circle, Attleboro, MA. 02703—Tel.: 617-222-6466.

Board Certified in Family Practice: To be Board Certified in Dermatology in November 1976. Connecticut license, 33 years old. Medium or large community. Solo, group or associate practice desired. Presently completing training at St. Joseph's Hospital in Chicago. Lawrence S. Krain, M.D., 5801 N. Sheridan Road, Chicago, Ill. 60660.

Family Medicine: Resumes are on file for seven physicians who will be available in summer of 1977 to establish practice in Connecticut. Contact CSMS.

Internal Medicine: (Gastroenterology) Board certified, 30, ABIM. Seeks partnership, group or hospital practice. Available now. Connecticut license.

Internal Medicine: (Nephrology) Board eligible. Seeks associate type practice. Completing training at Cleveland Clinic Foundation. Available now. Pierre Berthiaume, M.D., 3423 Elmwood, Cuyahoga Falls, O. 44221.

Internal Medicine: Part time position desired while completing a fellowship at Yale. Available evenings and week-ends. Covered office and clinic on a part time arrangement while in the service. 29 years old. References available. Connecticut license.

Internal Medicine: (Hematology) Connecticut license. Available now. 34 years old. Prefers institutional setting. FLEX. Board eligible.

Internal Medicine: (Cardiology) FLEX. Available now. Presently in practice. Trained at American University of Beirut and Peter Bent Brigham Hospital in Boston. Board eligible. 37 years old. Stephan Yenikomshian, M.D., 575 Pasadena Avenue, Owosso, MI. 48867.

Obstetrics/Gynecology: Available now. Board eligible. Presently in practice, but wishes to relocate in CT. Trained in Taiwan, Chicago and N.Y.C. 33 years old. Solo, group or associate practice. J.B. Hwang, M.D., 3990 Bronx Blvd., Bronx, NY. 10466.

Ophthalmology: Available now. Connecticut license. Board eligible. Presently in practice. 40 years old. Trained at NYU and Jewish Hospital of Brooklyn. Resume on file at CSMS.

Primary Care—Emergency Room: Part time position desired. Board eligible in psychiatry. Available immediately. Connecticut License. J.E. Millette, M.D., 968 Farmington Avenue, West Hartford, CT. 06107.

Surgery: General and traumatic. Available now. In practice. 52 years of age. Desires associate or institutional type practice. Luis A. Barranco, M.D., Throckmorton, Texas 76083.

Surgery: General and vascular. Available now. Board eligible. 34 years old. Presently with group in the midwest. Desires to move east to join small group. Contact CSMS.

Surgery: General. Available now. Board eligible. Group or associate practice desired. 33 years old. Trained at Univ. of Pittsburgh; USPHS and Cedars of Lebanon Hospital in California. Robert S. Weiner, M.D., 2012 Holly Vista Ave., Los Angeles, CA.

Urology: Available now. Completing training at University of Pennsylvania. Solo or associate practice. Board eligible. 33 years old. William F. Gadbois, M.D., 323 Walnut Hill Lane, Havertown, PA. 19083.

Primary Care—Occupational Physician: Desires short term position for October, November and possibly early 1977. Connecticut license. Wide variety of experience. William F. Ketchum, M.D., Apt. 1003, 419 Atkinson Drive, Honolulu, HA. 96814.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Allergy: Physician anticipates retiring soon. Irving H. Uvitsky, M.D., 3101 Main Street, Bridgeport, CT 06606.

Anesthesiology: Hospital in Greater Hartford area. Send resume to CSMS.

Emergency Room Opportunities: Park City Hospital, Bridgeport; Bridgeport Hospital, Bridgeport; Lawrence and Memorial Hospital, New London; Day Kimball Hospital, Putnam; Johnson Memorial Hospital, Stafford Springs.

Family Practice: Active, solo practice available in lower Fairfield County. Coastal community. University affiliated hospital. Contact CSMS.

Internal Medicine: Large practice of recently deceased physician available in Middletown. Contact CSMS.

Pediatrics: Board eligible or certified. To join medical staff of four at Mansfield Training School to provide medical care to handicapped. State benefits. Salary $28,067 to $33,245. Sherwin Mellins, M.D., Director, Medical and Clinical Services, State Department of Mental Retardation, 79 Elm Street, Hartford, CT 06115.

Occupational Health: Connecticut license. State Department of Health. Contact Mr. John J. Crowley, Personnel Administrator, 79 Elm Street, Hartford, CT 06115.

Family Practice: Well established practice available with modern office-home. Building specifically designed by well known architect, located on beautiful lake in an urban community. Office, with separate entrance, has 5 rooms, fully equipped. Health reasons force the MD to leave the area. Frank F. Northman, M.D., 753 Lakeside Drive, Bridgeport, CT 06606. (203) 372-1169 or 333-1092.

Emergency Room: As of August 1, 1976, six Connecticut Hospitals were in search of physicians to fill staff vacancies. Contact CSMS for listing.

Family Medicine: Opportunities in the Middlesex County area. Contact Malcolm Gorin, M.D., Middlesex Memorial Hospital, Middletown, CT. 06457.

Internist or Family Physician: Full time position at small psychiatric hospital and school. Albert Moss, M.D., Hall-Brooke Foundation, Westport, CT.

Occupational Medicine: Opportunities through the Connecticut State Department of Health. Contact Mr. J. J. Crowley, 79 Elm Street, Hartford, CT. 06115.

Obstetrics/Gynecology: Five opportunities are listed with CSMS.

Ophthalmology: Practice of a recently deceased physician. Contact Arthur Kaminsky, Esq., 158 Main Street, Putnam, CT. 06260.

Otolaryngology: Three opportunities listed through CSMS.

Surgery: (General) Solo practitioner seeking board certified or board eligible associate. Smaller community hospital. Attractive area conveniently located near larger medical center. Contact CSMS.

Surgery: General with thoracic surgery. Board certified or board eligible. Contact CSMS.

Internist: Full time staff. 84 bed hospital, mainly cancer care. University affiliation. Radiotherapy and Chemotherapy Clinic. $24,494 to $34,379. Fringe benefits. Harold W. Schell, M.D., Superintendent and Medical Director, Uncas on Thames Hospital, Norwich, CT. 06360.

Psychiatrist: Private practice in rural Connecticut. Well equipped community hospital. Initial subsidy available. Richard S. Dutton, M.D., 71 Spencer Street, Winsted, CT. 06098.

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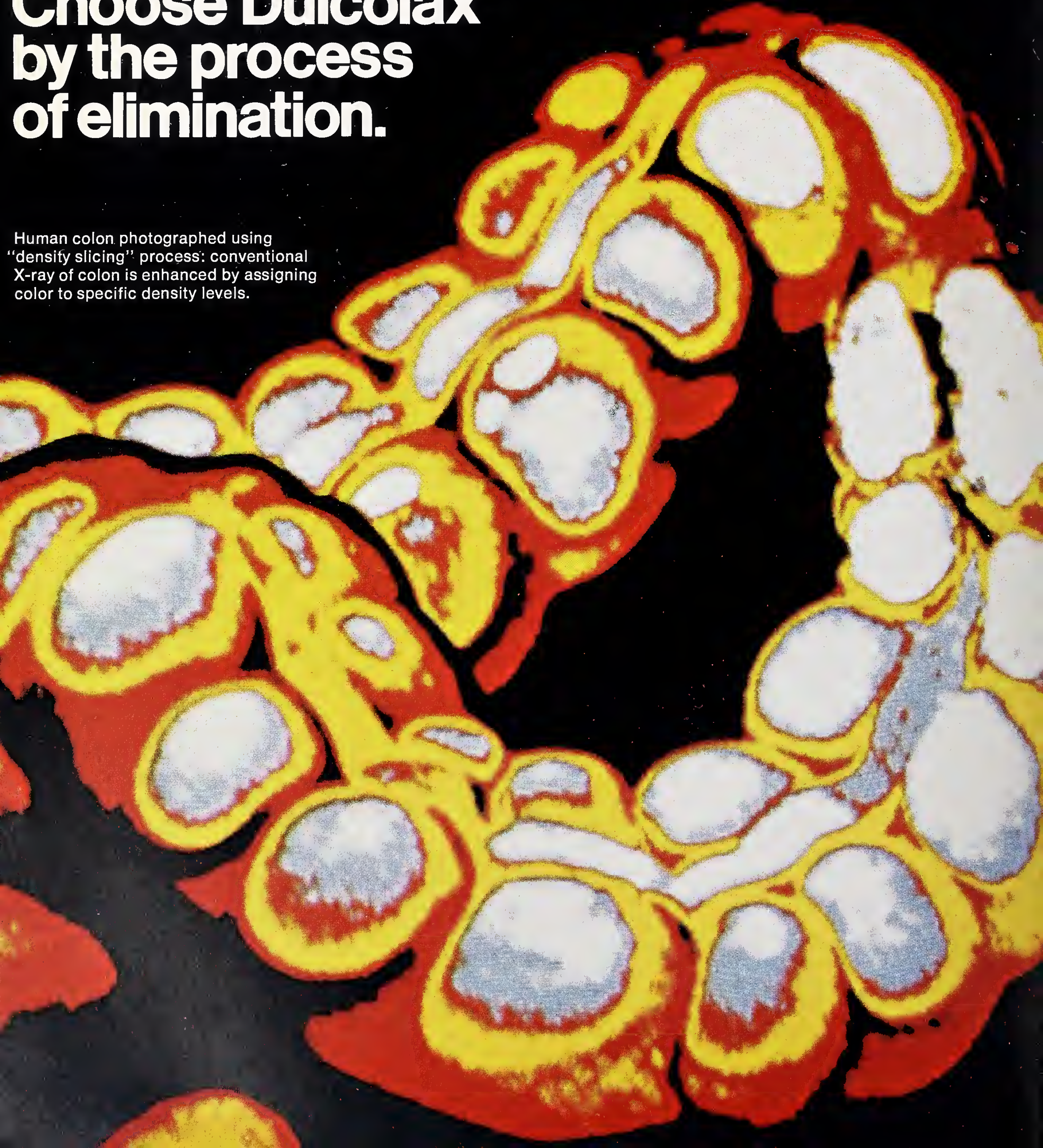

Human colon photographed using "density slicing" process: conventional X-ray of colon is enhanced by assigning color to specific density levels.

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*Forum, Mod Med *38*:198, 1970.

The Prostaglandins

Gerald G. Anderson, M.D.

If a government agency decided to stimulate and support studies that would show promise of increasing world food stores, one would hardly think that it would fund a protocol which proposed analyzing the seminal vesicular fluid of sheep. As the story of prostaglandins unfolds, however, this unlikely association between basic and applied science may well be shown to have occurred.

History

Forty-five years ago Kurzok and Lieb described an effect of human seminal plasma on uterine muscle strips.[1] A few years later in the 1930's, Goldblatt[2] in England and von Euler in Sweden independently described similar findings. von Euler, who was later to receive the Nobel prize for his work with norepinephrine, coined the term "prostaglandins" in his publication in 1934[3] because he wrongly deduced that the prostate gland was the primary source of the previously unknown substance. Work on the compound continued at a slow pace, primarily because of the relatively primitive laboratory techniques then available; however, the active substance was identified by von Euler as an acidic lipid, thus allowing it to be differentiated from other known compounds having similar actions on smooth muscle. The prostaglandin substance was found to both relax and contract smooth muscle depending upon its hormonal status and also to act as both a vasodilator and vasoconstrictor. Little work was performed during the years of World War II, but following the tumult, the project was turned over by von Euler to Sune Bergstrom, a fellow member of the Chemistry Department at the Karolinska Institute in Stockholm. Using huge shipments of frozen sheep seminal vesicles from Iceland, progressive purification processes finally yielded isolation of the first prostaglandin in 1957.[4] This was shortly followed by demonstration of the chemical structure by Bergstrom and his group along with the elucidation of not one but a family of compounds. Research efforts became more widespread in Europe and North America as new prostaglandins were discovered and as biosynthetic techniques made prostaglandins available for basic and applied studies.[6,7] Human studies by Bygdeman[8] in Sweden and by Karim[9] in Uganda centered on therapeutic uses and physiologic roles of prostaglandins in reproduction. In 1969, human studies were introduced to the United States at Yale University, and within a few years most clinical specialties had some type of prostaglandin research program underway. The introduction of specific radioimmunoassays for various prostaglandins in 1972 further spurred investigational efforts.[10] This blossoming of work is reflected in the number of publications in 1964 (7) as compared to 1972 (2000). An international monthly research journal, *Prostaglandins,* has entered its fifth year of publication. Some have likened the bourgeoning prostaglandin story to that of the era of the corticosteroids, the only difference being the potential wider effects of prostaglandins on health care.

Biology

Anderson and Ramwell[11] have pointed out that there are six major points to be made when one begins to consider the prostaglandins:

1. The prostaglandins form a large class of unobvious naturally occurring compounds, some 16 thus far having been described. Therefore, even if no biological activity could be demonstrated, just the existence of so many novel compounds would be of great fundamental interest.
2. Prostaglandins are readily released from tissues and organs and are present in most, if not all, cells and secretions. The substances formerly known as Darmstoff, medulin, and hysterotonin are now known to be prostaglandins. Prostaglandins can be released by specific stimuli such as vagal stimulation or by non-specific tissue damage from any cause.
3. There are few, if any, classes of compounds which have so many different effects upon cells, tissues, and organs. Effects have been noted in all classes of smooth muscle and in all endocrine target tissues.
4. The prostaglandins exhibit a high biological activity. Effects on erythrocytes have been noted at a concentration as low as 10^{-11}M, while most events call for nanogram range concentrations.
5. Prostaglandins exhibit strict structure activity specificity. For instance, PGE_1 inhibits aggregation in human platelets while the slight structural change of PGE_2 enhances aggregation.
6. Prostaglandins probably exert their disparate effects by interacting with the cAMP system and other membrane bound enzymes which are associated with specific cell types.

The prostaglandins are C20 oxygenated cyclic fatty acids which are produced from essential fatty acids.

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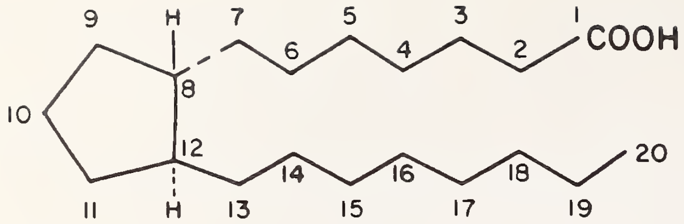

Figure 1

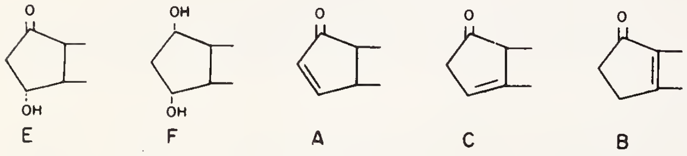

Figure 2

The biosynthesis from arachidonic acid is a highly complex process yielding a variety of closely related lipids whose basic hypothetical structure, prostanoic acid, is seen in Figure 1. The five basic cyclopentane ring structures are seen in Figure 2. The compounds are also grouped into mono-, bis-, and tris-unsaturated classes according to the number of carbon-carbon double bonds in the parent E-type compound, and this class designation appears as a subscript in prostaglandin terminology. A prostaglandin synthetase enzyme and possibly other enzymes, such as phospholipase-A, are also requirements of biosynthesis. Prostaglandin production can be limited both by certain analogues of the naturally-occurring prostaglandins and by some commonly used drugs such as aspirin and indomethacin which may owe their anti-inflammatory values to inhibition of proglandin production and release.

Prostaglandins are formed, act and are metabolically inactivated within the cell and, except in unusual states, seldom leave the cell in an active form. However, most prostaglandins administered intravenously are rapidly inactivated by vascular beds, especially those of the lungs. This inactivation is a complex process involving specific dehydroxy—and dehydrogenases resulting in non-active metabolites in the urine. Thousands of analogues of prostaglandins have been prepared in the laboratory. Of these, the 15 methyl compounds, which reduce the effectiveness of prostaglandin 15—dehydrogenase, have been found in humans to be proportionally more potent.

Lee[12] has questioned the term "hormone" as applied to the prostaglandins. They do not fit the classic description because of their intracellular life in various physiologic processes; however, following intravenous infusion, inflammation and trauma or during labor, effects can be ascribed to vascular transport to distant sites. It must be concluded that prostaglandins are truly in a class by themselves.

Clinical Implications

Possibly because prostaglandins were first isolated from human semen, and because their first effects were noted upon myometrium, the first clinical trials were in the area of reproduction. The initial efforts of Karim[9,13] which indicated that F prostaglandins were present in the plasma, amniotic fluid and umbilical cord blood of women in labor, but were not found in pregnant women not in labor, suggested that prostaglandins might be of use in the induction of term labor. His early studies, as well as those of Bygdeman[8] and Wiquist[14] in Sweden, gave indications that intravenous prostaglandins might be superior to oxytocin for the induction and stimulation of labor. Our initial study, which was presented to New York Academy of Science in 1971[15] utilized a highly structured protocol. Our initial results, which suggested that prostaglandins were no better than oxytocin for term induction and may not be as safe due to an increased incidence of hyperstimulation, have held to this day despite several thousand additional cases.[16] E prostaglandins, both intravenously and orally,[17] have shown promise, but no clear cut advantage can be shown at this time. There is suggestive preliminary evidence that prostaglandins may be more efficacious in difficult induction or in high risk obstetrical problems but further results are needed.[18] In England, prostaglandins have been made commercially available for labor induction.

In the area of elective termination of pregnancy, however, the prostaglandins have not only proved to be superior to other available regimens, but are the first commercial products to be available in this country (Prostin F$_2$).* Prostaglandins have the capability of inducing uterine contractions in gestations which are resistant to infusions of oxytocin. Intravenous infusions of PGF$_{2\alpha}$ and PGE$_2$ can induce abortion; however, gastrointestinal, cardiovascular, and hyperthermic side effects were found to be excessive.[16] The approved commercial use involves the instillation of 40 mg of PGF$_{2\alpha}$ via transabdominal catheter into the amniotic cavity. Labor is induced and abortion occurs in an average of 24 hours. The former standard method of inducing midtrimester abortion, intraamniotic hypertonic saline, was associated with several undesirable events: sudden death due to hypernatremia, subclinical and clinical D.I.C., renal and cardiac damage, and uterine wall damage. Although the treatment-abortion interval is no shorter with PGF$_{2\alpha}$, the above serious side effects have been eliminated.[19,20]

Prostaglandin vaginal suppositories have also contributed to solving a continuing clinical dilemma, that of intrauterine fetal death without labor. This syndrome has been associated with severe consumption coagulopathies.

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*The Upjohn Co., Kalamazoo, Michigan

Because the uterus is usually resistant to oxytocin infusions, hysterotomy had to be resorted to when signs of coagulation abnormalities appeared. PGE_2 vaginal suppositories have changed our standards of clinical management in that most patients deliver about 8 hours following insertion of one 10 mg suppository. Treatment is begun as soon as a diagnosis of fetal intrauterine death is made.[21]

Among other areas of reproductive research, one promising lead concerns the luteolytic effect of prostaglandins. In certain animals, $PGF_{2\alpha}$ appears to be the agent which causes corpus luteum regression following non-fertilization of a receptive endometrium. If a similar process occurs in humans, the possibility exists that prostaglandins could be used as a nonsteroidal contraceptive.[16]

As in other systems, different prostaglandins have contrasting effects upon the cardiovascular system. Two classes of prostaglandins, those of the A and E series, appear to play a physiologic and, possibly, a pathologic role in human vascular pressure maintenance. Lee has shown that E and A compounds administered to hypertensive man produce a decrease in blood pressure, an increase in renal blood flow, and promote water and sodium diuresis. Circulating plasma PGA concentrations have been found to be lower in hypertensive man than in the normotensive state. These prostaglandins may act as intrarenal hormones which contribute to blood pressure regulation. It is hoped that PGA_2, which appears to be the ideal antihypertensive agent, will yield significant clinical applications, particularly in the area of essential hypertension.[22]

Selective vasoconstrictive and vasodilatory characteristics of the E and F prostaglandins have shown promise of being important diagnostic aids in various radiological procedures. Jacobson indicates that two of these clinical avenues are: 1) in the diagnosis of visceral tumors and ischemic disease of the intestine; and 2) in the diagnosis and localization of esophageal bleeding sites.[23]

Non-selective vascular manipulations are also possible as shown by studies of Elliot et al[24] and Christensen and Fabricus.[25] These authors showed that systematically administered PGE_1 could be used in children with cyanotic congenital heart-disease where patency of the ductus arteriosus was necessary to maintain arterial oxygen saturation.

PGE_1 added to human blood decreases platelet aggregation. This finding has been put to practical use in the harvesting of good quality platelets from human blood in high yield. More recently, some endoperoxides, which are intermediates in the synthesis of prostaglandins, have been shown to increase platelet aggregation. Since the formation of endoperoxides is blocked by aspirin, Horton feels that there is some justification for the belief that the incidence of myocardial infarction may be less in persons who regularly take small doses of aspirin.[26] Similar conclusions could be made regarding the extent of myocardial and other infarctions and in the treatment of phlebitis.

Ramwell et al found that elevated prostaglandin levels in baboons treated with lethal doses of endotoxin could be successfully blocked by treatment with a potent inhibitor, indomethacin.[27] Thus the prostaglandins, or knowledge of their role in health and disease, promise significant possibilities in the management of many cardiovascular problems.

Various prostaglandins have been detected in the gastrointestinal tracts of most species. Their effects on intestinal strips in vitro have led to studies on the action of prostaglandins on gastric secretion. Robert has shown in dogs that PGE_1, PGE_2, and PGA_1 inhibit gastric secretion and prevent ulcer formation in rats.[28] Wilson's recent study in humans indicated that an analogue, 16, 16-dimethyl prostaglandin E_2, was a potent inhibitor of gastric volume and acid secretion following histamine stimulation. The drug was taken orally, acted for about two hours, and no side effects were noted. There is promise that this compound may be useful in treating peptic ulcer disease.[29]

In the respiratory system $PGF_{2\alpha}$ exerts a bronchoconstrictive action while PGE_2 relaxes bronchial smooth muscle. This information from animal experiments has stimulated clinical studies in asthma therapy. As in other systems, the role of prostaglandins in health and disease was found to be much more complex than anticipated; however, this work should eventually bring about a more acute awareness of the functional pathology of asthma.[30]

In the central nervous system prostaglandins have been shown to have effects on behavior, regulation of food intake, body temperature and cardio-regulatory functions.[31]

Studies of great potential significance are also proceeding in such diverse areas as cancer,[32] diseases of the eye,[33] stress ulcers[34] and hypovolemic shock.[35]

Much of the basic information concerning the role of prostaglandins in various organ systems has been derived from animal models. A suggestion that prostaglandins may offer a new therapeutic approach in cattle breeding was made by Hendricks.[36] He found that $PGF_{2\alpha}$ could initiate estrous in beef heifers if given at certain stages of the estrous cycle. Cattle breeding by artificial insemination as currently practiced requires individual vaginal examinations to identify which animals have palpable corpora lutea. This time consuming, costly, and inefficient practice may be replaced by one in which cattle are injected with $PGF_{2\alpha}$ as they pass through a gate and sometime later are artificially inseminated.

Summary

The story of the prostaglandins is fascinating and their implications are enormous. From the laboratories are emerging volumes of data which are stimulating clinicians the world over to innovative clinical trials. This review has served its purpose if it has sparked interest in this family of compounds. An attempt was made to select references which were both recent and of notable significance; however, only the surface of available data has been scratched, and the reader is referred to those references which are accompanied by an asterisk indicating a review or multiple reference source.

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Surgery of the Rheumatoid Hand

Paul W. Brown, M.D.

Twenty years ago surgery of the rheumatoid hand was limited to rather desperate attempts to salvage severely deformed hands. Over the past two decades much progress has been made and we have now evolved to the point where surgical indications are fairly well agreed on and results are reasonably predictable. The ratio of good results to failure is steadily improving and though there is still much room for improvement, hand surgeons can consistently contribute to the well being of many rheumatoid arthritic patients who heretofore were destined to live with progressive deformity, pain and loss of function in the hands.

Advances in the field began in a few institutions where surgeon and rheumatologist worked closely together in the management of the rheumatoid patient. Amongst the leaders were Laine and Vainio in Finland who established that the rheumatologist must have overall command of the patient's management but at the same time be knowledgeable as to what the surgeon could offer the patient and willing to enlist surgical assistance when its need was apparent. They found that the surgeon must respect this command structure, must understand the state of the disease in the particular patient and must cooperate and communicate freely with the rheumatologist in planning surgery and in following the patient through a long postoperative period.

Sad to relate, these were the ideals established—and still adhered to in a few institutions—but which have never been very well applied in most American medical communities. Too often the rheumatologist or internist is ignorant of the potential of hand surgery for his patient and is unwilling to relinquish his patient to the surgeon. Too often the surgeon concentrates on only the surgical aspects of the hand and fails to communicate his findings, accomplishments (or failures) and recommendations to the referring physician. Suspicion, jealousy and ignorance have contributed to this lack of liaison: the net result is that many communities have arthritic patients with hand problems which could be improved but for which proper treatment is not being sought. Where the liaison has been established and where teamwork exists, results have been good for the individual patient and for the arthritic community. The ideal is a combined team effort between internist and surgeon with the internist designated as team leader but willing to temporarily relinquish that prerogative to the surgeon as the patient's clinical needs dictate. The actual situation, in too many instances, is a fragmented approach where the internist is unaware of what the surgeon can offer to the patient and the surgeon, when he does see the patient, not informing the internist of what he proposes to do, why he proposes to do it, and most particularly, not working with the internist during the protracted postoperative period. It is sad, and common, to see a patient for the first time whose hands have already been irretrievably damaged or even destroyed: hands which could have been salvaged with earlier surgical attention. Hopefully, an article such as this written by a surgeon for a predominantly nonsurgical audience will help spread the word as to what is available to the patient with the type of problems discussed herein.

The Rheumatoid Hand

Rheumatoid hand problems fall into three categories: discomfort, disfigurement and dysfunction. The three are usually co-existent and intermingled though often the patient can clearly state which of the three is of greatest concern to him. Many patients are embarrassed to admit that the cosmetic aspect is of importance to them but I have found it safe to assume that all patients with deformed hands, regardless of age or sex, are disturbed by the abnormal appearance. Asthetics of the hand usually loom large in the patient's eyes even though he is reluctant to admit it and it is best to introduce this topic and to invite frank discussion of it. Patients are seldom resentful of this; on the contrary, they seem to welcome the introduction of the topic by the physician.

Forecasting the rate and specifics of the progression of the disease in hands is often impossible but it is nevertheless of some help to be able to classify the type and stage of the disease in the patient, his hands and specific areas of the hands. There are different goals and expectations in the monocyclic form of rheumatoid arthritis than in the polycyclic type, and in the unfortunate 15 percent who have unremitting and steadily progressive disease this knowledge, though often discouraging, helps in planning surgery and preparing the patient for the future.

In the early stages of disease and before any pattern has evolved, it is important that the surgeon understand the early manifestations of rheumatoid arthritis, what they portend for the future, and to understand both the diagnostic problems and the therapeutic challenges of the internist. It is equally important that

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the internist understand that surgical intervention early in the disease may contribute much to the patient's comfort and may also have a definite prophylactic effect on progression of the disease in a specific area. He will only willingly refer patients with early rheumatoid arthritis of the hands to the surgeon if he is confident that the patient will be returned to him for his control and that any surgery proposed will in all probability give some improvement and with a low complication rate.

Rheumatoid arthritis is a systemic disease affecting many, any, or all tissues of the body and hand. Hand manifestations are just as commonly due to tendinous, vascular and peri-articular soft tissue damage as to intra-articular pathology. Changes may be limited specifically to a set of tendons or to the synovium of one joint or may be diffuse throughout all tissues of the hand. Spontaneous remissions, rheumatoid flares, or slow progression of disease and deformity are all possible within the same patient or even within finite areas of the body, though other areas may at the same time show an entirely different pattern for better or worse.

Classically the early signs of rheumatoid arthritis in the hand are pain, swelling and stiffness of the wrist or finger joints. Painless swelling is possible as is stiffness without swelling or with little pain. Occasionally, presenting signs will be those of localized involvement such as painless extensor tenosynovitis, a carpal tunnel syndrome or a trigger finger due to rheumatoid involvement of a flexor tendon. Possible, but rare, is a spontaneous tendon rupture with few antecedent symptoms. As the disease progresses, the joint swelling tends to become fixed and as stiffness advances contractures and deformities such as ulnar deviation of the fingers, wrist displacement or zig-zag thumbs begin to appear. As these progress, the patient will notice concomitant loss of function manifested by loss of strength of the hand, loss of coordinated movements of the fingers and an increasingly bizarre appearance of the hand. Roentgenograms will, albeit belatedly, mirror the progression with signs of joint erosion, loss of joint space and alignment, carpal dissolution and obviously skeletal malalignment.

The old dictum that any surgery should be deferred until the disease is "burnt-out" is still around though its fallacy has long ago been exposed. Rheumatoid arthritis that is "burnt-out" is a disease which has already caused irreparable damage and presents the surgeon with very limited opportunity to salvage a useful hand. There are no substantiated reports that surgery on the hands of rheumatoid arthritis in even the most active forms of the disease is harmful to the patient or to his hands or causes any acceleration in the disease process. Quite the contrary, early surgery may successfully prevent a hand from acquiring crippling deformities, may allay or ablate the disease in specific areas and may certainly save the patient much pain and suffering during the active stages of the disease.

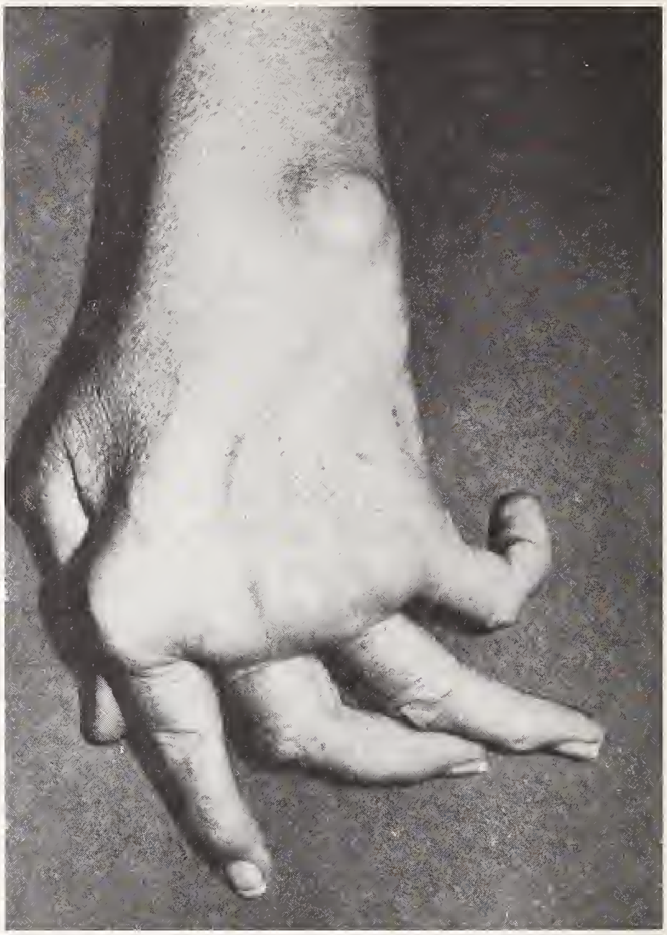

Figure 1A

55-year-old female. Rheumatoid arthritis for ten years. Ulnar drift, metacarpophalangeal joint dislocation and dislocation of distal ulna started five years ago and have been steadily progressive. Metacarpophalangeal joints are painful and function of hand is about 25 percent of normal. The optimum time for surgery is long past.

Types of Surgery

I. Prophylactic: Three types of operations may benefit the hand involved in early rheumatoid arthritis: synovectomy, tenosynovectomy and carpal tunnel release. None should be considered unless the patient is under the regular care of a rheumatologist, internist or family practice physician with a particular interest in this type of disease and no surgery should be done until it is quite clear that the patient has been given an adequate trial of nonsurgical treatment and that, despite this, problems in the hand remain or are progressive. Counter to these requirements is the philosophy that the earlier diseased synovium and tenosynovium is removed, the less chance there is that it will cause irreversible damage. Compromise with the two extremes is necessary and most are agreed that if the symptoms and findings of joint and tendon involvement have not shown signs of improvement

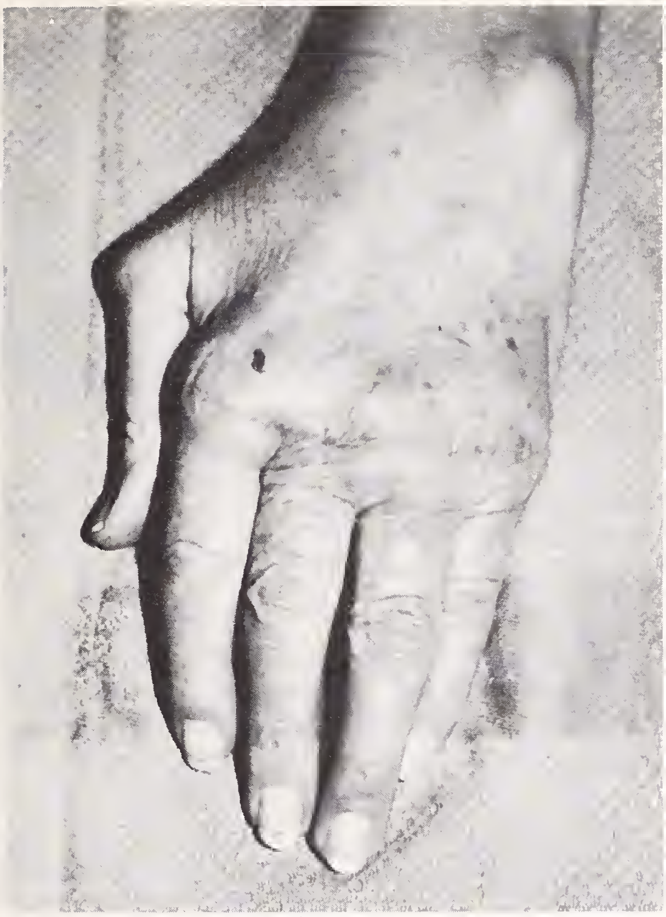

Figure 1B

Three months after silastic implant arthroplasty of metacarpophalangeal joints. Thumb reconstruction and resection of distal ulna still to be done. Hand now comfortable and function is improved slightly and cosmesis considerably.

within three to six months of the start of medical treatment that surgical removal of the pathologic tissue is recommended. The "wait and see" attitude unfortunately is still very common and has had tragic consequences for some patients: patients who now have hands beyond salvage in whom early surgery could have given some promise of retained function and comfort.

a. Synovectomy: When joints of the hand and wrist have developed signs and symptoms of snyovitis and the visible and palpable bulging synovium manifested by thickening about the joints has not subsided during medical treatment, surgical removal of this proliferative hypertrophic tissue should be done. The early results of synovectomy are quite good in terms of decreased pain and improved appearance and, to a lesser degree, in improved motion. Late results are variable: the synovitis may recur within the first year or several years after surgery or not at all. The overall conclusion is that synovectomy arrests the progression of the disease in a particular joint but for an unpredictable period. The procedures, though extensive, are relatively innocuous. I have performed synovectomies on many hundreds of fingers and other joints and have found complications to be extremely rare. Conversely, I have often found benefits to be obvious and prompt: relief of pain and improved function are frequently apparent within a day or two of surgery. More important are the benefits persisting over several years which have resulted in over half the synovectomies reported. Even though the synovitis may ultimately recur, during this quiescent period progression has been arrested and the useful life of the joint thereby extended and the patient given a respite from pain.

The metacarpophalangeal joints of the fingers and thumb and proximal interphalangeal joints of the fingers are those joints most commonly involved with rheumatoid synovitis and each of these is easily approached through a straight-line dorsal incision which allows a nondestructive and almost complete synovectomy. These incisions heal promptly and leave cosmetically acceptable scars. Early return to function is stressed following this surgery and usually the operated hand is back to uninhibited use within three or four weeks of surgery.

A rapidly progressive and destructive type of synovitis may affect the distal radio-ulnar joint leading to early destruction of this joint, extension of the synovium into the adjacent wrist joint and into the extensor tendons, all of which may then lead to dislocation of the ulna, loss of wrist rotation, increased pain and tendon rupture. Early synovectomy of this joint is quite successful in arresting the process giving prompt relief of pain and extending the useful life of the wrist and hand.

Tenosynovectomy may be indicated on either the dorsal or palmar aspect of the hand. Most commonly involved by the tenosynovitis are the tendons within the extensor compartments of the wrist: enormous amounts of hypertrophic tissue may develop in these areas often leading to single or multiple ruptures of these tendons. Prophylactic removal of this tissue very definitely prolongs tendon life and hand function. When dorsal swelling has persisted for more than three months, the risk of spontaneous tendon rupture grows steadily and prophylactic removal is definitely in order provided the patient has been on a satisfactory medical regimen. When tenosynovitis and synovitis co-exist, both the involved tendon areas and the joints can be operated upon at the same time. It is quite possible for an experienced hand surgeon to do extensor tenosynovectomy of the wrist plus synovectomies of eight or nine joints in one hand at one operation and patients tolerate such extensive surgery with amazing grace and with little morbidity.

Signs and symptoms of median nerve entrapment are often the first indication that a rheumatoid tenosynovitis has developed on the flexor aspect of the wrist and hand. As with all carpal tunnel syndromes, the longer the condition is allowed to exist, the poorer the prognosis for symptomatic relief and the less reversible are any sensory or motor deficits which have developed. Tenosynovitis involving the flexor tendons within their sheaths in the palm and fingers may rapidly lead to secondary joint contracture or flexor tendon rupture. Removal of this tissue is a relatively simple surgical task, whereas reconstruction or replacement of ruptured flexors is often complex and with less chance of satisfactory results. Triggering of any of the digits is often an early sign of flexor tenosynovitis and any trigger phenomenon persistent for more than several weeks should be surgically corrected.

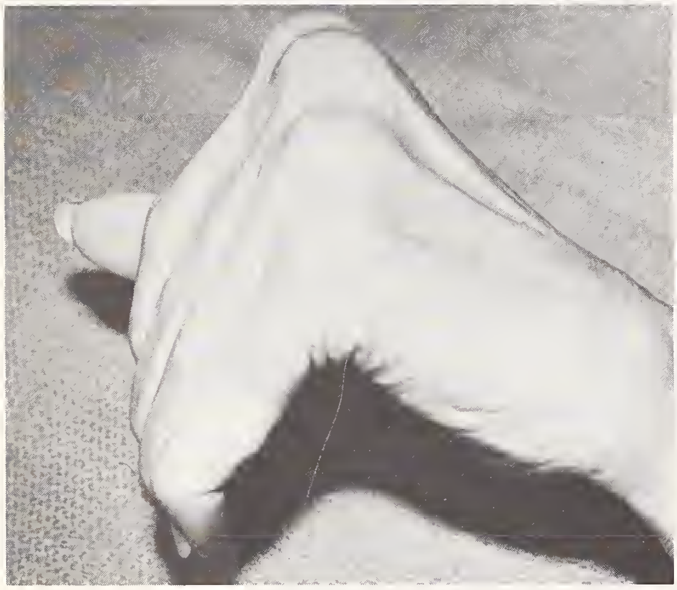

Figure 2A

35-year-old female with rheumatoid arthritis for seven years. Metacarpophalangeal joints are progressively subluxing and all flexion of the proximal interphalangeal joints has been lost. Slightly painful.

II. Reparative Surgery: This is the second type of surgery and mainly involves the repair of ruptured tendons or their replacement by graft or tendon transfer. Tendon ruptures usually imply that the initial opportunity for prophylactic surgery has been missed but, as the disease may exist in different stages from joint to joint or area to area, preventive surgery may still be productive in these other locations and it is important that the physician look carefully for them.

III. Reconstructive Surgery: This is late surgery of the rheumatoid hand which has already developed joint deformity and significant loss of function or grotesque appearance. It is generally done in the hand which has progressed to Stage III or IV of the disease but it is important to understand that various stages may co-exist in the same patient and thus it is not rare to find an active synovitis present in a metacarpophalengeal joint which has already lost all articular cartilage or has become dislocated. Joint deformity and disruption does not necessarily imply then that the disease is "burnt-out" in that joint: further progression of the disease with increasing deformity is not only possible but probable.

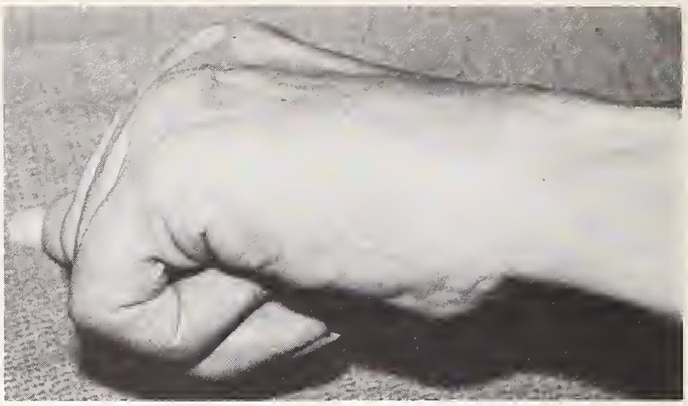

Figure 2B

Six months after metacarpophalangeal silastic implant arthroplasty and contracture release of proximal interphalangeal joints. Intermittent dynamic splinting still required to prevent recurrence of swan-neck deformities. Appearance and function markedly improved.

Reconstructive measures consist of tendon realignment, arthrodesis, joint resection, contractural release and arthroplasty. It is challenging and often discouraging surgery. Spectacular successes are rare but modest and worthwhile gain is not. Improvement to some degree in each of the categories of pain, appearance and function can usually be obtained in the cooperative patient but is dependent not only on proper indications for surgery and good surgical technique, but also on consistent, extensive and prolonged postoperative hand management.

The classic gnarled and crippled hand of rheumatoid arthritis represents an avoidable, or at least a correctable, tragedy. The most common combination is ulnar and volar displacement of the metacarpophalangeal joints with either swan-neck deformities of the fingers or their exact opposite, boutonniere deformities. The metacarpophalangeal joint dislocation may be corrected by silastic joint replacement; the swan-neck deformities by contracture release, and the boutonnieres by proximal interphalangeal joint arthrodesis.

Dissolution of the carpal bones leads to wrist deviation or dislocation deformities which are not only painful and unsightly, but also deprive the hand of balance, strength and coordination. Wrist arthrodesis, or occasionally arthroplasty, gives predictable and consistent improvement.

Thumb deformities are common in the arthritic hand and, though usually not preventable, are quite correctable. Most common is the intrinsic-plus deformity in which a progressive flexion contracture of

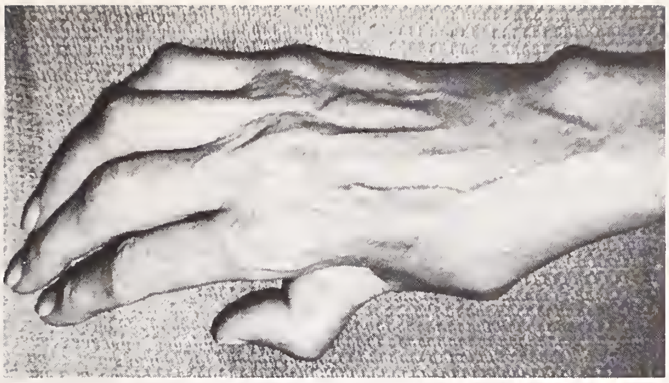

Figure 3A

Intrinsic-minus deformity of thumb in 42-year-old female who has had rheumatoid arthritis for three years. Thumb deformity is bilaterally symmetrical and began to appear within six months of onset of disease and progressed to the useless state shown above within five months.

the metacarpophalangeal joint in turn leads to hyperextension and ultimately instability and angulation of the distal joint: also painful, crippling and unsightly. Arthrodesis of the distal joint and contracture release of the metacarpophalangeal joint, often coupled with a tendon transfer, gives marked improvement. Less common but even more disabling and ugly is the opposite thumb deformity of intrinsic-minus, in which the carpometacarpal joint displaces, the metacarpophalangeal joint hyperextends, and the distal joint falls into flexion, depriving the hand of any useful prehension. Arthroplasty of the carpometacarpal joint and fusion of the metacarpophalangeal joint gives a normal appearing thumb with a dramatic gain in function.

These deformities may exist in many bewildering combinations in the same patient or within the same hand. They may be bilaterally symmetrical, but it is not rare to see one set of deformities in one hand and the exact opposite type of deformity in the other. Even within the same hand exact opposites may be capriciously present in adjacent fingers, one finger demonstrating swan-neck deformity and an adjacent finger a boutonniere. The dynamics of the hand are complex, and once the deforming process of synovitis, capsular attenuation and joint contracture start, there is no way to predict the course of the ensuing deformities. Nevertheless, any one of these deformities or combination thereof may be improved to some degree by reconstructive surgery.

Painful, stiff and deformed elbows may co-exist with hand deformity, and though normal elbows cannot be obtained, synovectomy and radial head resection will usually decrease pain and prolong useful life of the joint. The surgery can be safely done at the same time the hand is operated upon if time permits.

Splints, casts and other devices may serve a temporary purpose before or after surgery, but they are in no way substitutes for reconstruction. They are uncomfortable, unsightly and generally encumber the hand sufficiently to impair rather than assist in function. Much the same is true of physical therapy modalities: special exercises, the use of heat with whirlpool or paraffin baths and manipulation impress both the patient and the physician that something is being done, but to rely on any of these to correct or arrest deformity is to be whistling in the dark. They may all be useful adjuncts to surgical correction but none are definitive.

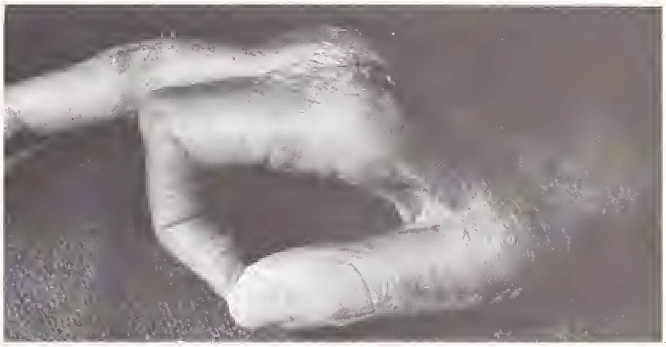

Figure 3B

Normal appearing, comfortable and effective thumb resulted from arthroplasty of carpometacarpal joint and arthrodesis of metacarpophalangeal joint.

Reconstructive surgery has no miracles to offer the rheumatoid hand and only an occasional outstanding success. Failure and disappointment are common and success is measured in increments of small gain. It is most unusual that a hand is made worse by surgery given good surgery, adequate control by the surgeon, and good communication between the surgeon and rheumatologist. Alternatives to reconstructive surgery are few and nonprofitable: the only real choice the patient has is to put up with his hand deformity or to seek reconstruction. The patient with deformed hands, pain and progressive loss of function, faced with the probability that things will get worse, will often clutch at straws of hope and we must be careful not to promise more than we can deliver. Any differences between the patient's hopes and the surgeon's realistic prognosis for gain must be reconciled preoperatively. Even small gains may emerge as triumphs for as Sterling Bunnell said: "When you have nothing, a little's a lot."

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Halothane Hepatitis Revisited

Paul G. Barash, M.D., Nicholas M. Greene, M.D., and Luke M. Kitahata, M.D., Ph.D.

Although halothane has been employed in the clinical practice of anesthesia for over 18 years, controversy still surrounds its use.[1,2] Recently, a patient presented with hallmarks of the syndrome of "halothane hepatitis":[3] high spiking fever, chills, eosinophilia and jaundice following a second exposure to halothane.

Report of a Case

A 57-year-old female was admitted complaining of swelling of her right forehead for one year with increase in size and increased pain two days prior to admission. She gave a history of asthma, her last major attack being two years previously. Her allergies included penicillin, dust, pollen and cheese. At age 37, she had an uneventful tonsillectomy under general anesthesia. She smoked three packs of cigarettes per week. Present medications included occasional use of a bronchodilator by inhaler. During her asthmatic attacks, she occasionally required prednisone. She was employed cleaning telephones; the solvent used produced an allergic dermatitis necessitating a change of solvent. Following recent restoration of paintings using lacquer, she again noted an allergic dermatitis with some nausea.

Physical findings on admission included swelling over the right frontal area with bilateral peri-orbital edema. On auscultation of the chest, a few scattered wheezes as the bases were heard together with grade II/VI apical systolic ejection murmur. Laboratory data on admission were normal.

On the third hospital day, she was premedicated with hydroxyzine 50 mg, meperidine 50 mg, and atropine 0.4 mg intramuscularly prior to surgical exploration of the right frontal sinus. One hour later, anesthesia was induced with intravenous thiopental, and endotracheal intubation was facilitated with succinylcholine. Anesthesia was maintained with halothane (1-2%) and 60% N_2O in oxygen. The duration of anesthesia was one hour and 15 minutes and that of surgery was 45 minutes. Anesthesia and surgery were uneventful.

Postoperatively, although still afebrile (Figure 1), she continued to have persistent drainage from the right frontal sinus. Since the drainage continued, antibiotic (cephalexin) therapy was instituted. Twelve days following her first operation, she had a second procedure for re-exploration and reconstruction of her frontal sinus. She was premedicated again with hydroxyzine and meperidine. Her anesthetic management was similar to her first anesthetic. In addition, however, cocaine crystals and lidocaine were applied topically for vasoconstriction. The duration of anesthesia was 4 hours and 45 minutes and that of surgery was 3 hours and 55 minutes.

Although she had been afebrile since admission, upon return to the ward she was noted to have a temperature of 102°F (Figure 1). She continued to have spiking temperatures daily and on the seventh postoperative day her eosinophil count rose to 28%. On the fourth postoperative day her bilirubin was increased as were her SGOT and alkaline phosphatase (Figure 1). Since the patient continued to spike fever, showed no signs of clinical improvement and her liver function tests remained abnormal, prednisone was started nine days after the second operation. Her temperature returned to normal the following day and she appeared more comfortable. Three days after the prednisone was started a liver biopsy was performed (Figure 2). Subsequently, the prednisone was gradually decreased. She was discharged on the 26th postoperative day to be followed in the outpatient department. She continued to do well without any further problems. The conclusion was that the patient had experienced subacute hepatic necrosis probably secondary to halothane.

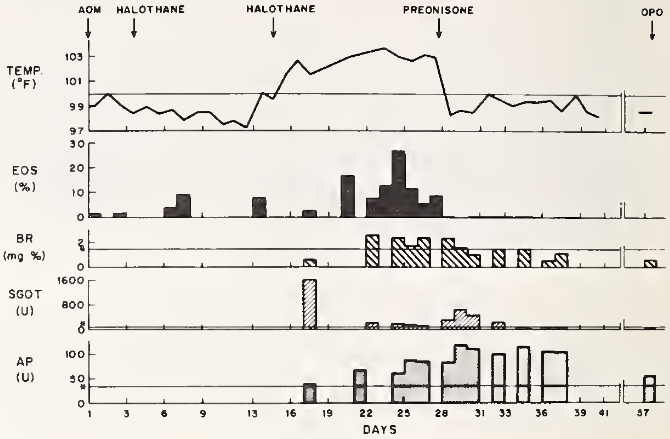

Figure 1

Temperature chart and significant laboratory data. Note the dramatic decrease in fever following prednisone therapy. Abreviations: %Eos = percent eosinophils in white cell count, BR = total bilirubin, SGOT = serum glutamic oxaloacetic transaminase, AP = alkaline phosphatase, * = upper limits of normal for indicated laboratory tests.

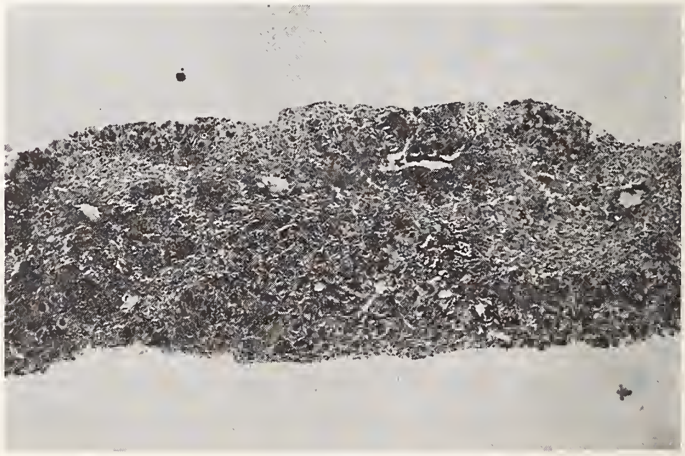

Figure 2

Liver biopsy. The biopsy section revealed an acute hepatitis with large zones of necrosis and cell dropout bridging adjacent triads and central veins. A lesion interpreted as subacute hepatic necrosis.

Addendum

Three months following discharge from the hospital, the patient again noted recurrent swelling in her forehead. Surgical drainage was required. With

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normal liver function and laboratory tests preoperatively, she was premedicated with diphenhydramine 50 mg, atropine 0.6 mg intramuscularly. One hour later she was induced with pentothal 300 mg IV; pancuronium 6 mg intravenously facilitated intubation. The anesthetic was then continued with fentanyl and intermittent thiopental supplemented by droperidol. During the course of the anesthetic, she required intravenous aminophylline (0.1%) solution and hydrocortisone (100 mg) for severe bronchospasm. She had an uneventful recovery.

Dr. Barash:

Halothane was introduced in England by Imperial Chemical Industries in 1956 and in the United States in 1958. In 1958, the first report of liver dysfunction following halothane appeared.[4] In 1961, Ayerst Laboratories was required to issue the following drug warnings: "The administration of halothane to patients with known liver or biliary tract disease is not recommended." Since halothane was generally considered to be an otherwise useful anesthetic, the National Research Council decided to investigate the question of its hepatic toxicity. The result was the National Halothane Study,[5] which ultimately surveyed 856,000 anesthetics. Among the conclusions of the study was that the overall death rate associated with halothane was less then that associated with other anesthetics. Furthermore, the incidence of hepatic necrosis following halothane was as rare following halothane as it was following other general anesthesia. Indeed, halothane had an excellent record of safety. The National Halothane Study failed to show a causal relationship between halothane and hepatic necrosis. There is no evidence that the use of halothane is contraindicated in patients with pre-existing liver disease.[1,6] For example, halothane is considered to be the agent of choice for portal-caval shunt surgery.

Klatzkin hypothesizes that hypersensitization is the etiology of the hepatic involvement.[3] The criteria for a true hepatotoxin include: 1) susceptibility by all individuals exposed to the toxin, 2) the lesions have a distinctive histological appearance, 3) the degree of necrosis is dose related, 4) the lesion is reproducible in animals and finally 5) appear after a predictable latent period following exposure. In drug sensitization: 1) the lesions occur usually only sporadically in susceptible individuals, 2) more common in women and in patients with an allergic background, 3) the lesion is never reproducible in animals and 4) there is no relationship between the severity of the reaction and the dose of the agent. In other words, the risk and the degree of the necrosis are dependent upon susceptibility. If they are susceptible, they get a mild or a very severe reaction irrespective of the length of exposure.

In recommending steroid therapy, the medical consultant thought there is a reason to believe, without having a control study, that drug sensitization may be suppressed with steroid therapy. This represents an immunologic reaction, the precise nature of which is not understood.

Dr. Greene:

There is still debate as to whether halothane hepatitis actually exists or not. I am certainly a believer. It is rare, but it does exist as a drug sensitization reaction. There are, however, no reliable tests to prove the existence of sensitivity to halothane at the present time. Sensitivity, when it does exist, may involve cross sensitization to other halogenated anesthetics, including, for example, methoxyflurane, though the nephrotoxicity of methoxyflurane (on a totally different basis) is a greater problem that its hepatic sensitization. It is likely that cross sensitization between halothane and other more recently introduced halogenated anesthetics, such as enflurane and isoflurane, may be reported as further experience is gained with these newer drugs. The time between exposures to halothane is irrelevant in terms of the hepatic sensitization reaction. Once a patient is sensitized to halothane there is no reason to expect that it will make any difference whether the interval between exposures to halothane is two weeks, two months, or two years.

However, although a firm believer in the syndrome of halothane induced hepatic sensitization, as an anesthetist, I must put this potential danger into its proper context insofar as overall risk to the patient is concerned. The incidence of "halothane hepatitis" is extremely low, somewhere in the range of 1 in 8,000 or 10,000 halothane anesthetics. The incidence of death due to this cause is even lower. Whether one is justified in avoiding exposure to halothane because of a relatively remote possibility of precipitating hepatic sensitization to halothane depends upon the risk associated with the use of anesthetics other than halothane. All anesthetics are associated with risk. Reliance upon anesthetics other than halothane may reduce the chance of hepatic damage, but if, in so doing, the risk of other complications is increased more than the risk of hepatic failure is decreased, then little has been gained in terms of overall patient safety.

I call your attention to the fact that we are not dealing with an abstract concept; we are dealing with a real death rate, not a medieval theologic discussion of how post anesthetic deaths occur. There is no such thing as a trivial or minor anesthetic. Deaths associated with anesthesia are all too frequent, but they are not all related to halothane. All anesthetics should be considered on a risk: benefit basis. Anesthetic explosions, fatal laryngospasm, prolonged post anesthetic depression and ventricular fibrillation, for example, are less frequent with halothane than with other general anesthetics, so in many instances the remote risk of halothane induced hepatic damage may well be less than the risk of death due to other causes when other general anesthetics are used.

Halothane can and should be given not only once but repeatedly when, in the opinion of the anesthetist, the risk of not giving halothane is greater than the risk of giving it.

Dr. Kitahata:

I would like to discuss some of the statistical problems associated with the National Halothane Study. Of the approximately 850,000 anesthetics included in the study, 16,000 deaths resulted; 11,000 were autopsied and 10,000 of the necropsies included examination of the abdominal contents (60% of the total). Out of the 10,000 autopsies, 946 had suspected hepatic necrosis, and in 223, it was confirmed. Hepatic necrosis was then defined as minimal, intermediate or massive. Only the massive group was selected out for further study. Of the 82 patients that had massive hepatic necrosis, only 9 were unexplained as to etiology. In 7 of these 9, halothane was given and of those 7 who received halothane, 6 were already published or known at the time of the study and only one new case out of 856,000 patients were discovered.

Hepatic sensitization is not a direct toxic effect nor the effect of the metabolite upon the liver. If it is indeed a hypersensitivity reaction, it should have a certain amount of reactivity with protein to form the haptane which has not clearly been demonstrated. Further, if it were due to a generalized allergic reaction or hypersensitivity, the liver should not be the only organ involved and there should be some form of confirmative tests one can utilize.

We know that liver damage is just as common following the use of other agents as following halothane anesthesia. Furthermore, it is almost impossible to differentiate halothane hepatitis from viral hepatitis on histological basis, although it might be possible to do so on clinical basis. Regardless of the agents used, postoperative liver damage following two consecutive anesthetics or surgery is naturally higher than that following the first procedure.

Summarizing the present status, it is unfortunate, I feel, that at the present time the legal implications are playing a greater role than medical implications.

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Mitral Valve Prolapse and Bacterial Endocarditis

M. Ganesa Pandian, M.D., and Alvin Lichtman, M.D.

Abstract—The syndrome of mitral valve prolapse with associated clinical, phonocardiographic, electrocardiographic and angiographic abnormalities has been well established in the last few years.[1-4] Echocardiography was first used by Shah and Gramiak[5] to study patients with the clinical syndrome of mitral valve prolapse. Subsequently various echocardiographic manifestations were discussed by many authors[6-9] and with increasing availability of echocardiographic examination, a large number of cases of mitral valve prolapse syndrome are being recognized even in asymptomatic individuals.[10] Antibiotic prophylaxis against bacterial endocarditis is recommended for these patients irrespective of the cardiac findings or symptoms,[11,12] even though there are only 22 cases of bacterial endocarditis on prolapsed mitral valve so far reported in the literature.[11-20] We are reporting the first patient who has been diagnosed to have mitral valve prolapse by echocardiogram after being admitted with bacterial endocarditis and treated successfully.

Case Report

Mrs. K., 47-year-old married, white female, was admitted to Norwalk Hospital on 12/14/73 with a history of having had progressive weakness of the left upper extremity, loss of consciousness associated with generalized seizure with tongue biting. There was no history of any neurological symptoms in the past and no history of heart disease was obtained. She had a complete physical five years prior to admission and no murmur was reported. She felt perfectly well until early November, 1973 when she started experiencing insidious onset of tiredness. She noted no fever or sweats but had a few episodes of chilliness in early December. The night before admission, she noticed a funny feeling in her left hand and again on the day of admission, in the early morning, noticed numbness with weakness in the left arm. There was no headache or vomiting. In spite of these symptoms, she drove to work and on the way felt dizzy and went into a drug store where she lost consciousness and had generalized convulsions and was admitted to the hospital.

Past History:

Patient has been a healthy person. Vague history of rheumatic fever during childhood was given by the patient's mother. No history of hypertension, diabetes, or ischemic heart disease. She had her last dental work approximately one year ago and there was no history of surgical procedures or urinary tract manipulations or any significant illnesses in the recent past. She has been a known alcoholic for many years.

Family History:

Mother and sister have heart murmurs.

Personal History:

Patient is separated and has 2 daughters. She attained menopause 10 years ago, drinks moderately for many years and smokes 1-2 packs of cigarettes per day for the past several years. Patient is allergic to penicillin.

Review of Systems:

This was unremarkable except for the problems outlined above.

Physical Examination:

At the time of admission revealed a conscious and alert female, cooperative, pulse 88/min, irregular. Respirations 24/min, temperature 101.2°F, blood pressure 130/80 mm Hg. Few ecchymoses were noted in the left leg and small bruise was seen on the right forearm apparently sustained during the generalized convulsions. Head was normal. Eyes revealed normal pupils and no subconjunctival hemorrhage. Fundi were normal. Ears, nose and throat were normal. There was no neck rigidity. No jugular distension was noted. Carotid pulsation was normal and no bruit was heard. Chest: lungs clear. Heart: Apex was visible and palpable at left fifth intercostal space in the mid-clavicular line. No thrills were palpable. S1 was loud at the apex and a pansystolic murmur was heard in the apex radiating to the left axilla. The same murmur was heard in the left parasternal border also. Abdomen was soft and the liver and spleen were not palpable. Genitalia: normal. Central nervous system: alert, speech normal. Cranial nerves: normal. Motor system: weakness of left upper extremity distal to proximal with flaccidity. Mild weakness of the left half of the face was also noted. Reflexes: brisk reflexes on the left upper extremity. Hoffman positive left side. Plantars Flexor on both sides. No sensory deficit was noted.

Laboratory Data:

Chest X-Ray: normal. WBC 12,300/cu mm with Poly 69, Stab 14, Lymph 11, Atypical lymph 1, Mono 5, Platelets adequate. Erythrocytes sed rate 61mm/hour. Blood glucose 109 mg/dl. BUN 9 mg/dl. CO2 27, Chloride 100, Potassium 3.7, Na 134 m Eq/L. Creatinine 0.8 mg, uric acid 3.0 mg. LDH 213, SGOT 11, CPK 69, Alk P'tase 46, Total protein 6.7 gm with albumin 3.7 and globulin 3.0, Cholesterol 207 mg, calcium 8.9 mg. Total bilirubin 0.6 mg, with 0.2 mg direct. Urine did not show any Red blood cells or protein but a few WBC's were seen. Blood cultures on admission: 6 blood cultures done 30 minutes apart grew strep. Viridans in all of them. ECG on admission revealed normal sinus rhythm with occasional atrial premature beats, otherwise within normal limits. Spinal tap was done on admission: fluid was haemorrhagic with an opening pressure of 170 mm and the closing pressure was 100 mm, Protein 112 mg and sugar 90 mg, and the CSF did not grow any organisms on culture. CSF: RBC count 28,000/cu mm with 100% crenated cells and WBC 6/cu mm. Patient had an EEG and brain scan done on 12/17/73 and both were normal. Patient had a phonocardiogram and an echocardiogram on 12/17/73. Phono shows evidence of mitral regurgitation and echo is typical of late systolic prolapse of mitral valve (See Figure 1).

Hospital Course:

The working diagnosis on admission was mitral regurgitation with possible infective endocarditis and cerebral embolism and possible rupture of the mycotic aneurysm into the subarachnoid space. When the blood cultures came back positive for strep-viridans the next day, she was started on Vancomycin 1g IV, Q 6 hours because of penicillin allergy, and streptomycin 1g/day. Since there was dif-

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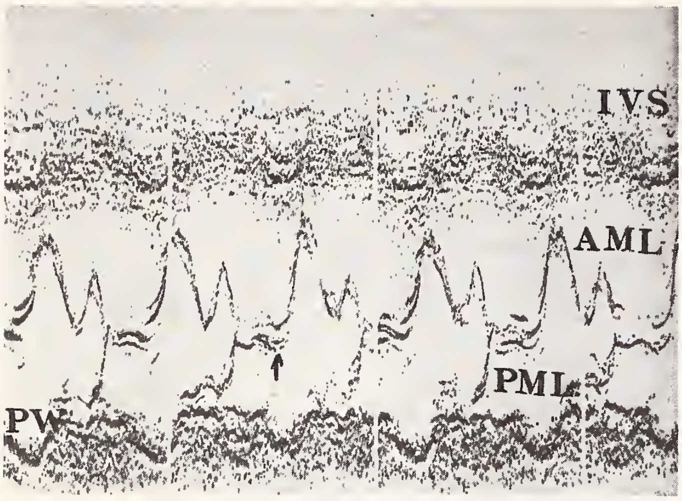

Figure 1

IVS—Interventricular septum, AML—Anterior mitral leaflet, PML—Posterior mitral leaflet.

ficulty in obtaining Vancomycin, Clindamycin and Streptomycin combination was instituted after 10 days of admission. Temperature started coming down with this regimen, yet it was felt a combination of Cefazolin 1g IV Q4 hours and Streptomycin 0.5 g IM Q 12 hours would be superior and hence the patient was started on the above regimen on 12/25/73. The serum bactericidal levels were excellent with this regime and the patient was under this regimen for 4 weeks with good improvement and did not suffer any complications. She was given physical therapy to the upper left extremity and showed good improvement. After she completed 5 weeks of antibiotic therapy and being afebrile for three weeks was discharged home on antibiotic prophylaxis. Since the patient was not willing to return, cerebral angiography was not done.

Final Diagnosis

1. Prolapsed mitral valve with mitral regurgitation.
2. Strep. Viridans Endocarditis.
3. Cerebral embolism with left faciobrachial monoplegia.
4. Subarachnoid hemorrhage secondary to ruptured mycotic aneurysm.

Discussion

Because of the advent of echocardiography and its liberal use, more and more cases of mitral valve prolapse are being recognized even in asymptomatic individuals. Syndrome of mitral valve prolapse can present with a wide spectrum of clinical symptoms and signs. Cases have been reported without any click or murmur, with isolated early or late systolic clicks, combination of a click and a murmur and with systolic murmurs alone.[4] Bacterial endocarditis has occurred irrespective of signs or symptoms. Cases have been reported even with isolated systolic click[11] or late systolic murmur.[15] Hence antibiotic prophylaxis should be advocated to all patients diagnosed irrespective of signs or symptoms. The case we have reported is an example of bacterial endocarditis on a prolapsed mitral valve diagnosed by echocardiography.

Summary

1. A case of bacterial endocarditis on prolapsed mitral valve is reported.
2. Echocardiography being a non-invasive and bedside technique is a valuable and reliable tool to study even a patient with severe illness.
3. Patients with mitral valve prolapse are prone to bacterial endocarditis and therefore should be placed on antibiotic prophylaxis before dental work or surgical procedures irrespective of symptoms or signs.

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Cervical Spine Injuries in Football

James A. Albright, M.D.

Over the past several years, the head has become an effective and well-developed weapon for blocking and tackling. However, with increased employment of the head as a tactical instrument, neck injuries among football players have become a serious problem. As a result of the catastrophic neck injuries sustained by football players, there has been an heightened outcry for rule reform to curtail such practices.

Dramatic injuries such as death and quadriplegia are not common, but are devastating in the sense that paralysis is permanent in the players who survive. Blyth has reported the incidence of fatalities in high school and college players from 1931 to 1971.[1] A plateau had been reached from 1956 until the 1964 season when there was a sudden upsurge of deaths, with the majority due to head and neck injuries. Other studies completed within the past decade have catalogued hundreds of football fatalities related to head and neck injuries.[2, 3, 4] Since no accurate centralized records are kept, the total number of cervical spine injuries throughout the country is unknown. However, in 1975 there were six instances of quadriplegia, one death, and one cervical spine fracture in the Philadelphia vicinity alone.[5] In Connecticut, at least one case of quadriplegia and one subluxation at C5-6 without neurological involvement are known to have occurred.[6] While the figures are statistically buried in the many thousands of individuals who play organized football every year, studies recently done at the University of Iowa show that a much larger percentage sustain neck injuries of a less disastrous nature. Thirty-two percent of freshmen football recruits at that school were found to have evidence of an old neck injury.[7] In a similar study conducted at 347 Iowa high schools, there was a 42% team incidence of neck injuries that were serious enough to result in absence from games or practices. The study also revealed that in many instances the coaches were not aware that neck injuries had been sustained, and only slightly more than half of those injured sought medical consultation from a licensed physician.[7]

Since no centralized records exist, it is difficult to impress upon coaches and other athletic administrators that the danger of neck injuries is significant. Also, the long term implications of non-devastating injuries have never been documented, although it is likely that the incidence of neck problems in later years is much higher in those who have incurred previous trauma.

The use of the head in blocking and tackling has been called "spearing, head butting, butt blocking, face to the numbers, form tackling, and stick blocking," among others. The development of face masks and harder helments convinced coaches that the head and the neck would be sufficiently protected from injury if such maneuvers were undertaken. Tacticians viewed harder helments as excellent battering rams and allowed head tackling and blocking to become one of the hallmarks of their strategies.[8] Coaches contend that the use of the head is a reality in a game of such intense physical contact as football, arguing that eliminating the head would be virtually impossible. However, provisions to forbid the deliberate and malicious use of the helmet or head to ram an opponent have been included in the two most widely used football rule books, published respectively by the National Federation of State High School Associations[9] and the National Collegiate Athletic Association.[10] But coaches have their own individual definitions of spearing, and it is conceded that one of the problems in curtailing such practices is that the terms mean different things to different people.[11] In any case, the rules were designed to protect the player being rammed, when in fact the player doing the ramming is most seriously in danger of injury.

The current NFSHSA rules include a lengthy statement on the dangers of head blocking and tackling, but only the coaches can revise their teaching techniques to de-emphasize contact by the head. In fact, according to the University of Iowa study, coaches uniformly denied that they taught any illegal spearing techniques.[7] The attitude of coaches toward head blocking is varied. Some have responded to medical warnings of potential dangers but some have not. It is commonly felt that butt blocking and other forms of head contact are no more dangerous than other aspects of the game, if coached correctly. However, it appears that the "safe face forward" method of blocking, where the neck is extended rather than flexed, and which coaches consider the safest and most effective technique, is almost as dangerous as any other position. Although more catastrophic injuries occur in flexion, the majority of all neck injuries appear to occur in extension. Whether the neck is extended or flexed is less important than the simple fact that, regardless of the position, the player is vulnerable to injury if the head is used.[12] Many schools and colleges now recognize the problem; some have intuitively understood the dangers for many years and are

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adamant in preventing players from using these dangerous tactics.

Prevention of Injury (Table I)

Efforts to prevent spear tackling have become more common with increased publicity of the problem. The studies conducted at the University of Iowa are difficult to overlook, and already football professionals, as well as the general public, are responding. In its 1975 convention, the National Parent Teacher Association adopted a resolution urging improved safety precautions, citing studies done within the field of organized medicine.[13] To meet that end, the use of the shoulder as a blocking surface has been encouraged. Tactically, some coaches feel this may be a more effective, as well as safer means, since the shoulder provides better control and a wider blocking area. The University of Delaware play book now includes such a recommendation.[11]

Table I

Recommendations To Reduce The Danger Of Cervical Spine Injury In Football Players. (To protect the players from injury, and coaches, as well as school systems, from legal liability, the adoption of some of these changes would appear to be imperative prior to the 1976 season.)

1. Adoption of recommendations by organized medicine.
2. Adoption of policy by the school system, either at the state or local level.
3. Education of coaches, team physicians, and the general public to the dangers.
4. Training sessions for coaches to learn safer techniques.
5. Education of referees for more stringent enforcement of the existing rules.
6. Consideration of rule changes, such as:
    a. Consider all head-butting techniques as unsportsmanlike conduct with a 15 yard penalty and expulsion from the game.
    b. Mandate a 15 yard penalty with expulsion from the game for face mask grabbing.
    c. Eliminate the face mask, but maintain a mouthpiece, and possibly use a close-fitting nose guard.
7. Prohibit the use of any and all techniques in which the head is used for contact.
8. Conditioning exercises for maximum development of neck muscles.
9. Better medical supervision, including specific guidelines for returning previously injured players to competition.

The improvement of exercise techniques for the neck may help decrease the high incidence of injury. The Iowa study revealed that 88% of the football squad tested had undergone only five minutes of neck conditioning during their daily regimen.[7] It is often said that the danger of injury is less in athletes because their muscles are well-developed but this has not proven true. The neck muscles of football players are surprisingly weak unless they have been conditioned by a rigorous program for this specific purpose. The University of Iowa, in an effort to improve player safety, stresses flexibility and bridge exercises for the neck, as well as isometric and isotonic conditioning.

Another measure has been proposed by Richard Schneider, Professor of Neurosurgery at the University of Michigan Medical Center.[8] He suggests removal of the face mask and substituting for it a well fitting mouth guard on the teeth of the upper jaw. Such a move would encourage players to be more cautious, since the danger of injury to the face and teeth would be much greater if the head were used. The effect of removing the face mask might be reflected in the game itself, since the players would be encouraged to become more agile and less steam-rolling than before. At least one coach has tried Schneider's advice, and after almost four full seasons of using helmets without the face mask, the players have received no head or spinal injuries and the team's dental bill has been reduced to one-tenth of what it was previously.[11] Perhaps face masks have inspired players to think of themselves as invulnerable to injury so they act more brazenly. There is also a need for improved equipment as well as more widespread use of available aids. For instance, in the Iowa study, it was found that neck collars were rarely used.

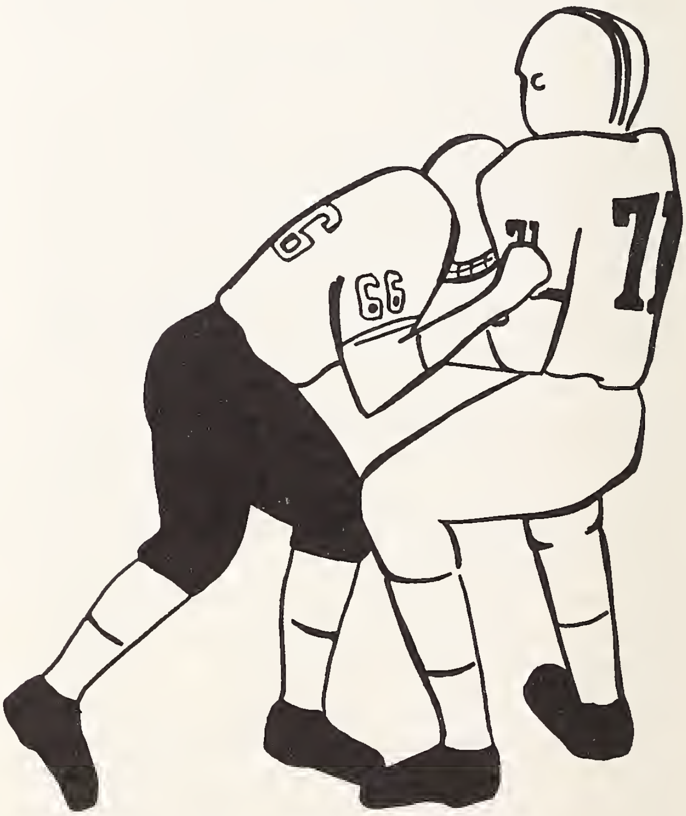

Figure 1a

Stick-blocking: The blocker or tackler plants his mask on the numerals of his opponent. His head is thrust forward and upward with his neck in hyperextension. This is regarded as one of the finest techniques ever devised in football. It is a legal and accepted method which is almost universally taught.

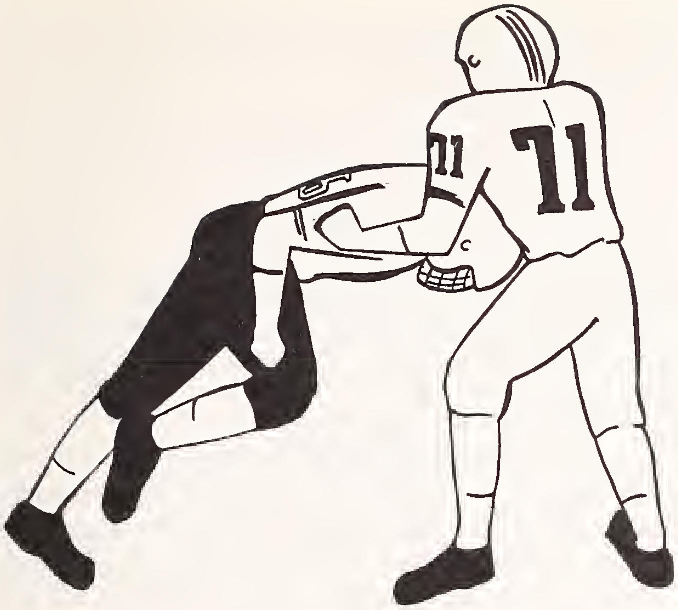

Figure 1b

Spearing: The deliberate and malicious use of the head and helmet in an attempt to punish an opponent after his momentum has stopped. This is an illegal technique which carries a 15 yard penalty, or disqualification if flagrant.

Perhaps the most effective remedy will be the increase in legal suits stemming from serious neck injuries. At least three suits, one settled last year out of court for a reported $275,000, have been pursued by permanently injured players who contended that their coaches taught them spearing tactics responsible for their paralysis. The likelihood of an injured player and his family initiating a suit will undoubtedly increase in the future; this increases the urgency of confronting the problem directly in order to minimize unnecessary risks to the schools, as well as to the players. The threat of personal legal liability may be in itself a sufficient inducement for coaches to direct their efforts toward less dangerous football techniques. Perhaps the deterrent of legal retribution would force coaches to reverse their assumption that rules against head contact are unenforceable. Simply, if players are not taught to practice spearing, they will not do so.

In any sense, the final solution lies with the coaches, team physicians, and the players themselves. Players are pitifully lacking in concrete education on the potential dangers of using the head as an offensive weapon. A stringent program directed toward that goal may encourage more player caution. The team physician has a responsibility to undertake pre-season neck examinations. Neurological and full cervical spine series of an already injured player are imperative in answering whether or not he should return to the game. Certain requirements, such as normal neurological examinations, healed fractures, and the absence of pain should be mandated before a previously injured player returns to full participation in the game.

Finally, all involved should remember that the goals of football are building character, learning discipline, and gaining self-confidence. It is important to keep this in mind, since players are only young men with varying degrees of physical and emotional strength. When a game designed to develop these virtues reaches the point where players are unnecessarily endangering their health and future, it is time to rethink the objectives, and act to restore the direction upon which football was originally based.

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Modern Concepts of Calcium Homeostasis

(This is the first of a series of five articles on calcium metabolism)

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Importance of Precise Regulation of Serum Calcium Concentration

Serum ionized calcium concentration is normally regulated between narrow limits, varying less than 10% about the mean. This tight control of circulating calcium concentration is accomplished by the concerted action of three hormones— parathyroid hormone, calcitonin and vitamin D—acting on the skeleton, the gastrointestinal tract and the kidney. Constancy of ionized calcium concentration is necessary for normal cellular function. Extracellular calcium is essential for blood coagulation and other extracellular enzyme activations, and is the major determinant of cell membrane permeability and neuromuscular excitability. Extracellular calcium also controls cellular responses through its effect on intracellular calcium concentration and movement. Calcium is essential for the coupling of cell excitation and contractile or secretory responses and for the function of many intracellular enzyme reactions and transport systems.

Variations in serum calcium concentration occur in many disease states. Both hypo- and hypercalcemia are associated with disturbances in cell function which can be anticipated from the knowledge of the physiologic role of calcium ions. Hypocalcemia results primarily in nerve conduction disturbances—paresthesias, tetany and convulsions. It is also associated with the development of cataracts and a variety of skin lesions and with impaired cardiovascular function. Hypercalcemia has multiple effects; on the brain—lethargy and coma; on the gastrointestinal tract—abdominal pain, nausea, vomiting and constipation; on neuromuscular function—muscle weakness and hypotonicity; and on the kidney—impaired concentrating ability and dehydration. Chronic hypercalcemia is associated with increased deposition of calcium and phosphate in soft tissues, such as the kidney and blood vessels, particularly if phosphate concentration is also increased.

Our understanding of calcium regulation has increased greatly during the last 15 years, mainly because we have learned that calcium fluxes are regulated by the interplay of several hormones, not just parathyroid hormone. We also have learned that the secretion of these hormones is regulated not only by calcium itself, but by changes in other ions and other hormones, particularly gastrointestinal hormones. This review will present a brief summary of these new concepts.

Calcium in the Circulation

Ordinarily we use as a clinical guide the measurement of total serum calcium concentration, even though it is the ionized calcium which is precisely regulated and which controls cell metabolism. Of the total calcium, approximately 50% is ionized; most of the remainder is bound to plasma proteins, particularly to albumin, and a small amount is complexed with other anions in the serum, such as bicarbonate, citrate or phosphate. The normal total serum calcium concentration in most laboratories is from 8.8 to 10.4 mg. per 100 ml. (4.4 to 5.2 milliequivalents per liter or 2.2 to 2.6 millimoles per liter). The calcium bound to plasma protein can vary considerably. It is decreased in acidosis and increased in alkalosis. Usually a change in pH produces a relatively small change in ionized calcium concentration and the value is quickly brought back to normal by changes in the secretion of calcium regulating hormones. Tetany can occur in alkalosis with only a slight decrease in ionized calcium concentration, because of a change in the interaction between calcium ions and excitable membranes. Changes in serum albumin concentration have a major effect and it is necessary to correct for this in assessing total serum calcium concentration (see Article 3 of this series).

Major Sites of Calcium Regulation

The three major sites of calcium regulation are illustrated in Figure 1. Calcium can enter the system via the gastrointestinal tract, from bone resorption, or by increasing tubular reabsorption in the kidney, and hence decreasing calcium excretion in the urine. Calcium also leaves the circulation by all three routes. Clinically hypercalcemia is usually associated with increased bone resorption, as in hyperparathyroidism or malignancy, or with increased gastrointestinal absorption, as in vitamin D intoxication, milk-alkali syndrome or sarcoidosis. Increased renal conservation does not ordinarily produce hypercalcemia, but it can help to sustain it, particularly in hyperparathyroidism. Conversely, hypocalcemia is usually produced by decreased bone resorption, as in hypoparathyroidism,

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or decreased gastrointestinal absorption of calcium, in rickets or osteomalacia. Increased renal loss of calcium can contribute and help maintain hypocalcemia, but does not produce hypocalcemia by itself.

Bone functions as a massive storehouse for calcium. 99% of total body calcium is in the skeleton and changes in the rate of resorption of this calcium are vital for regulation of serum calcium concentration. During the last 15 years, the control of this process has been studied intensively and all of the calcium regulating hormones have been found to affect it. The rate of bone formation also influences serum calcium concentration, but this process has been less thoroughly studied, largely because laboratory techniques have not been as well developed as those for studying bone resorption.

The absorption of calcium from the gastrointestinal tract has also received much attention. It is regulated largely by the active metabolites of vitamin D. Calcium is also secreted back into the gut, largely as part of the digestive juice. This process does not appear to be as tightly controlled by calcium regulatory hormones, although calcitonin may play a role. The renal regulation of serum calcium concentration has also been carefully studied and found to be quite complex. Most of the calcium filtered by the glomeruli is absorbed in the proximal renal tubules. This process is linked to sodium reabsorption and influenced by those factors which influence sodium transport. Parathyroid hormone is a major regulator of both proximal and distal calcium transport. It is also a major regulator of phosphate reabsorption. Drugs also influence tubular reabsorption of calcium; saline infusions and loop diuretics, such as furosemide, decrease calcium reabsorption and result in calcium loss and thiazide diuretics increase tubular reabsorption and decrease calcium excretion.

Hormonal Control of Calcium Regulation

During the last decade the actions, interactions and control of parathyroid hormone (PTH), the active metabolites of vitamin D, and calcitonin (CT), have been studied intensively. The major findings are summarized in Table 1. Other hormones, ions and local factors can affect calcium metabolism and are important in some disease states. These will not be discussed here, but are covered in the general references given below.

1. Parathyroid Hormone (PTH)

PTH is a linear polypeptide hormone of 84 amino acids which is secreted by the parathyroid glands at a variable rate inversely proportional to the circulating ionized calcium concentration. PTH is initially synthesized as a larger pro-hormone, which is then cleaved to the 84 amino acid peptide and stored in secretory cells. After secretion, the 84 amino acid form is further metabolized to several fragments which vary in size, biological activity, and degradation rate. While the 84 amino acid form is biologically active, fragments consisting of the first 30 amino acids of PTH from the amino terminus are also biologically active.

The major effect of PTH on the skeleton is to stimulate resorption by osteoclasts and possibly other bone cells. Resorption results not only in the release of calcium, phosphate and other components of the mineral, but in degradation of the matrix with excretion of collagen products including hydroxyproline. In the kidney, PTH can decrease proximal tubular reabsorption of calcium but increases the overall rate of calcium reabsorption by increasing distal tubular reabsorption. Despite increased reabsorption, urinary calcium in hyperparathyroidism is usually high because hypercalcemia increases the filtered load. The inhibition of phosphate reabsorption by PTH occurs throughout the tubule. As a result, phosphate excretion is markedly increased. The excretion of cyclic adenosine monophosphate (cAMP) is also increased in the urine. PTH probably has no direct effect on the gastrointestinal tract, but may stimulate calcium absorption indirectly by increasing the activation of vitamin D. The effect of PTH on bone formation is not clear. It may inhibit bone formation directly, but in chronic hyperparathyroidism, bone formation is often increased.

The overall effect of PTH is to increase serum calcium and decrease serum phosphate concentration. The circulating calcium concentration is controlled by PTH and, in turn, calcium controls PTH secretion by negative feedback. Thus, low circulating calcium concentrations will stimulate PTH release, and if prolonged, will also increase PTH synthesis and produce parathyroid hyperplasia. When sufficient PTH has been secreted to increase serum calcium concentration, then this will, by negative feedback, inhibit further PTH release from the glands. The phosphaturic effect, which tends to reduce serum phosphate, plays an important permissive role in this regulation, since otherwise calcium and phosphate mobilized from bone would redeposit in bone or in soft tissues and not help sustain the serum calcium concentration.

Measurement of circulating PTH can be carried out using a radioimmunoassay. Such immunoassays are commercially available for clinical use. However, the determinations do not always correlate well with parathyroid gland activity, possibly because of the heterogeneity of the immunoreactive material, some of which is biologically inactive. Pure human PTH is not clinically available, but a biologically active fragment has been synthesized. Bovine parathyroid extract has

Table 1

HORMONAL REGULATION OF CALCIUM HOMEOSTASIS*

Hormone	*Major Mechanisms of Action*	*Overall Effect*	*Stimulus to Secretion*
PTH	stimulate bone resorption	Increase Serum Calcium	Decrease Serum Calcium concentration
	inhibit renal phosphate reabsorption	Decrease Serum phosphate	
	stimulate renal calcium reabsorption		
Active vitamin D metabolites	stimulate intestinal absorption of calcium and phosphate	Increase Serum phosphate	Low calcium intake (indirect)
	stimulate bone resorption	Increase Serum Calcium	Low phosphate intake
Calcitonin	inhibit bone resorption	Decrease Serum Calcium	Increase Serum Calcium concentration
		Decrease Serum phosphate	Increase Serum Gastrin concentration

*Other actions of these hormones and stimuli to secretion have been described, we have listed those effects we believe are of major importance.

been used for many years, however its biological activity is inconsistent from batch to batch. Moreover, it is antigenic and therefore not useful for chronic therapy because of the development of antibodies. Parathyroid extract is used clinically to differentiate primary hypoparathyroidism from so called pseudo-hypoparathyroidism. In hypoparathyroidism caused by primary parathyroid gland failure or surgical removal, parathyroid extract produces a normal or exaggerated PTH response including an increase in serum calcium concentration and in urine phosphate and cAMP excretion. In pseudo-hypoparathyroidism, PTH is secreted, but the target organs are unresponsive to it. Hence, parathyroid extract will not produce the expected responses.

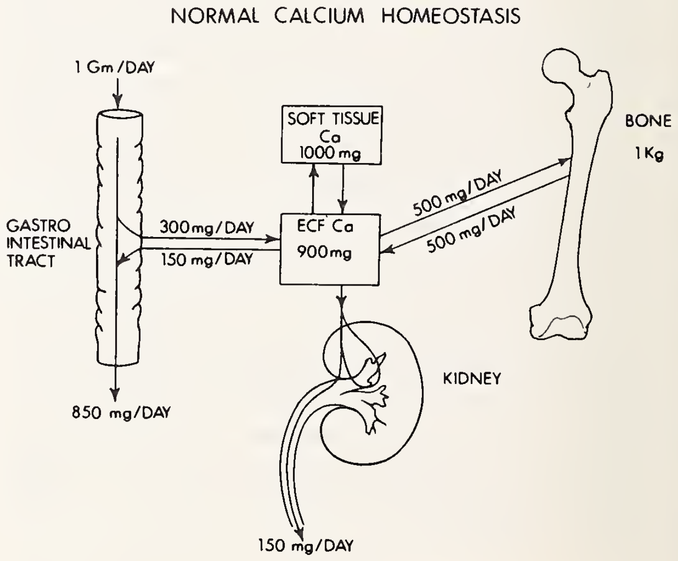

Figure 1

Major sites of calcium regulation and control of calcium homeostasis

Values are for a normal adult at zero calcium balance. Younger growing individuals show greater per cent absorption, bone accretion and bone resorption with net positive balance.

2. Vitamin D Metabolites

Intensive study of the role of vitamin D in calcium regulation over the past 10 years has resulted in new insights into the metabolism and mode of action of this agent, which is now considered a calcium regulating hormone. Vitamin D can be ingested as an irradiated plant sterol, ergocalciferol or vitamin D_2, but most of the vitamin D in the body is formed in the skin from the conversion of 7-dehydrocholesterol by ultraviolet light to cholecalciferol or vitamin D_3. These compounds are biologically inactive prohormones, which are converted in the liver by a specific hydroxylase to 25 hydroxy-vitamin D (25 OH D). This compound is biologically active, but only at high concentrations. It is probably the major circulating form of vitamin D and is carried in the blood by a specific binding protein. 25 OH D is further metabolized in the kidney to 1α 25 dihydroxy vitamin D (1,25 $(OH)_2D$) which is much more biologically active (Figure 2). The liver and kidney also produce other metabolites. Some of these are biologically inactive and may represent excretory products. In the kidney, when 1-hydroxylation is diminished, 25 OH D is converted to a different hydroxylated metabolite, 24 R,25 $(OH)_2D$, the biological importance of which is not known. The main effects of the active metabolites of vitamin D are to promote calcium and phosphate absorption in the intestine and to stimulate osteoclastic bone resorption. 1,25 $(OH)_2D$ is 100 to 5,000 times more potent than other vitamin D metabolites in producing these responses. The overall effect would be to increase both

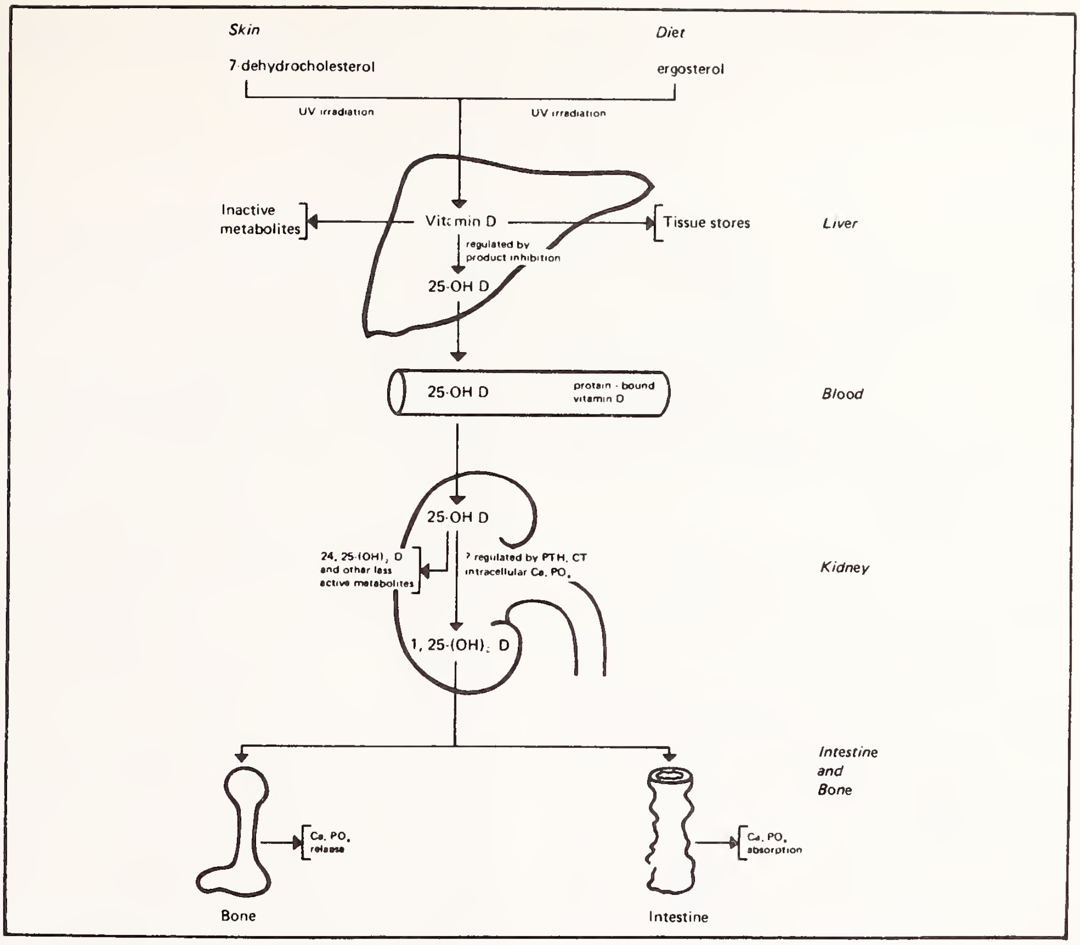

Figure 2
Schematic outline of current concepts of Vitamin D metabolism.

calcium and phosphate concentration in the serum. These effects, however, usually occur under conditions when calcium and phosphate are rapidly being deposited in newly formed bone, that is, vitamin D is activated to the greatest extent and shows the greatest tissue response in growing animals. Hence, vitamin D can be considered a hormone which facilitates bone formation and mineralization during growth. While it may seem paradoxical that this is brought about in part by stimulating bone resorption, the effect fits with the concept that skeletal growth is a process which requires an orderly coupling of formation and resorption to produce appropriate remodeling rather than a simple accretion of new bone substance. Moreover, the effect on intestinal absorption is generally greater than the effect on bone resorption. Thus in vitamin D deficiency bone resorption may actually be increased by secondary hyperparathyroidism and with vitamin D repletion bone resorption decreases because increased gut absorption of calcium stops the hypocalcemic stimulus to PTH secretion.

The formation of 25 OH D_3 in the liver is controlled largely by product inhibition, that is as more 25 OH D is formed, the product feeds back and inhibits further hydroxylation. This limits the activation of vitamin D and tends to prevent toxicity during periods of increased vitamin D formation or ingestion. The 1-hydroxylation in the kidney is probably under the control of the intracellular concentration of phosphate, which in turn can be influenced indirectly by changes in calcium and parathyroid hormone. It has been shown that when there is a deficiency of either calcium or phosphate in the diet, there is increased formation of 1,25 $(OH)_2D$ in vivo. The effect of calcium depletion appears to be dependent on the parathyroids. When calcium intake is low serum calcium tends to fall, PTH secretion is stimulated, this results in decreased tubular reabsorption of phosphate and hence, decreased intracellular phosphate. This response is blocked by parathyroidectomy. If phosphate depletion occurs without calcium depletion, then this can stimulate 1,25 (OH) D formation directly even in the absence of the parathyroid glands. Thus, the activation of vitamin D by these two hydroxylation steps is carefully controlled to maintain normal calcium and phosphate homeostasis.

These new concepts of vitamin D metabolism have not only helped us understand physiologic control, but also have helped explain the pathogenesis of certain forms of vitamin D deficiency and resistance. In uremia, the failure of the kidney to convert 25 OH D to 1,25 $(OH)_2D$ is important in the pathogenesis of renal rickets or osteomalacia. This can occur by two mechanisms, the retention of serum phosphate due to decreased glomerular filtration and the loss of renal mass and consequent loss of the 1-hydroxylase enzyme. In the unusual form of rickets called "vitamin D dependent rickets," in which only large doses of vitamin D can cure the disorder, a deficiency of the 1-hydroxylase enzyme has now been postulated, since some patients have responded to small doses of 1,25 $(OH)_2D$. On the other hand, vitamin D resistant rickets associated with phosphaturia does not respond well to any of the known metabolites and probably involves a primary defect in renal and intestinal phosphate transport systems themselves, perhaps representing a target organ defect analogous to pseudohypoparathyroidism.

The active metabolites of vitamin D are not yet generally available for treatment of patients, but various metabolites are currently being evaluated for their efficacy in disorders of bone metabolism. As noted above, 25 OH D can be considered the circulating hormonal form, and assay of this material by competitive binding is now available. 25 OH D concentration is decreased in patients with vitamin D deficiency, and malabsorption, and is increased in patients with massive vitamin D intake or after exposure to excessive sunlight. 1,25 OH2D is also found in the blood and assays for it are now being used experimentally, but are unlikely to be commercially available for some time.

3. Calcitonin (CT)

Calcitonin is the third major hormone that helps maintain normal calcium homeostasis. After its discovery in 1961, it was isolated from several species and the amino acid sequence and synthesis rapidly accomplished. Salmon and human CT have now been synthesized and salmon CT is available for clinical use in this country. CT is a peptide of 32 amino acids synthesized by the parafollicular cells of the thyroid. Its release is stimulated by high serum calcium concentrations and by gastrointestinal hormones, particularly gastrin. The major effect of CT is to inhibit osteoclastic bone resorption and thereby decrease serum calcium and phosphate concentration. It also can stimulate the secretion of fluid and electrolytes by the small intestine. The importance of the latter effect is not established. The inhibitory effect on bone resorption is probably most important for the prevention of transient hypercalcemia. The hypocalcemic effect of calcitonin cannot be sustained by continuous administration. When patients with hypercalcemia are given CT, the decrease in serum calcium concentration usually does not last longer than 48 hours. Moreover, patients with medullary carcinoma of the thyroid, tumors of the parafollicular cells which produce extremely high circulating concentrations of CT, usually do not show hypocalcemia. Indeed those with the multiple endocrine neoplasia syndrome, type II, actually often show hypercalcemia due to concommitant hyperparathyroidism. The most likely role for CT in normal calcium homeostasis is as an emergency hormone to prevent hypercalcemia after ingestion of high calcium meals. Because gastrointestinal hormones such as gastrin are direct secretagogues of CT, this effect can occur without a rise in serum calcium concentration, simply in response to feeding.

CT can be measured in the blood by radioimmunoassay and by bioassay. The diagnosis of medullary carcinoma of the thyroid can be confirmed by immunoassay for CT after calcium or pentagastrin infusion which increases CT concentration in these patients even more than in normal subjects. This test is particularly useful in relatives of patients with familial multiple endocrine neoplasia. Such relatives may have operable CT producing tumors which can only be detected by immunoassays after provocative tests. Such tumors are usually inoperable by the time they are clinically apparent. Immunoreactive CT has also been reported to increase in some patients with carcinoma of the bronchus and other malignancies. The diagnostic usefulness of this is unknown.

Synthetic salmon CT (calcitonin, Calcimar, Armour) has now been approved for use as the therapeutic agent of choice in symptomatic Paget's Disease. Salmon CT is also being used experimentally in hypercalcemia for its acute effects, although serum calcium concentration is seldom returned to normal and the effects are often short lived. These uses will be considered in Article 3 of this series on hypercalcemia and Article 4 on Paget's Disease.

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Genetics: The State of the Art in Connecticut

(This is the first of a series of six articles on genetics)

Margretta Reed Seashore, M.D.

Abstract—In the United States, 3% of all infants born have a congenital anomaly, a substantial number of which have a genetic component. Recent advances in chromosomal analysis, amino acid technology, and tissue culture methods have made diagnosis possible in many of these. In addition, such advances have led to prenatal diagnosis for many families. Two major medical centers in Connecticut, University of Connecticut and Yale, and the State Department of Health have made virtually all the nationally available advances a reality for Connecticut residents.

Every year, three of every 100 infants born in the United States are born with a major congenital abnormality. As many as 150,000[1] defective infants are born in the U.S. yearly, resulting in some 60,000 deaths. Many of these major disorders have a genetic component. Indeed, 20-20% of all pediatric hospital admissions are related to genetic disease.[2] The genetic factors may be chromosome abnormalities, single gene mutations, or polygenic mechanisms.

The Development of Diagnostic Techniques

As recently as ten years ago, little could be offered to the families of such children, despite the recognition of the familial aspect of many diseases. As early as 1890, Tay and Sachs had observed that the fatal neurodegenerative disease later to bear their name ran in families and had a predeliction for Jewish children. The clinical description of Down's syndrome offered no explanation for the marked resemblance between such affected children nor for the observed increase in births of such children to older mothers. What is new in the area of genetic disease is the availability of tools which have improved diagnosis and led to treatment making broader choices possible for families. Several technological advances have revolutionized clinical genetics (Figure 1). Human cell culture techniques have made biochemical and chromosomal diagnosis a reality. These techniques have derived from mammalian cell culture research which has been done since the turn of the century.[3] At first, in such studies, morphological characteristics were emphasized. Research then progressed to nutritional requirements, and continued from Chinese hamster cells to human cells. Work initiated by Tjio and Levan and Puck in the 1950s and 1960s has allowed manipulation of the culture environment resulting in studies of cellular nutrition, chromosomal structure, and finally subtle biochemical alterations.

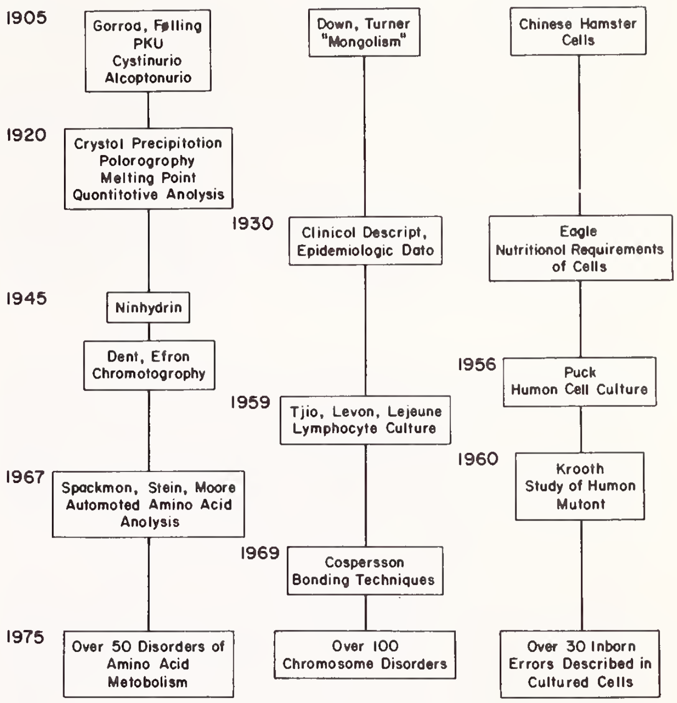
1905
Garrod, Følling PKU Cystinuria Alcaptonuria
Down, Turner "Mongolism"
Chinese Hamster Cells
1920
Crystal Precipitation Polarography Melting Point Quantitative Analysis
1930
Clinical Descript, Epidemiologic Data
Eagle Nutritional Requirements of Cells
1945
Ninhydrin
Dent, Efron Chromatography
1956
Puck Human Cell Culture
1959
Tjio, Levan, Lejeune Lymphocyte Culture
1960
Krooth Study of Human Mutant
1967
Spackman, Stein, Moore Automated Amino Acid Analysis
1969
Caspersson Bonding Techniques
1975
Over 50 Disorders of Amino Acid Metabolism
Over 100 Chromosome Disorders
Over 30 Inborn Errors Described in Cultured Cells

Figure 1

The observation by Lejeune in 1957 of an extra chromosome in Down's syndrome patients and the later description by Polani of the translocation chromosome carrier in familial Down's syndrome, led to much greater understanding of that condition. When, in 1960, Krooth and Weinberg, working at the National Institutes of Health, reported that galactose was not metabolized by fibroblasts from patients with galactosemia, the use of cultured cells for study of the inborn errors of metabolism was launched. At the present time, only a few cell types, including fibroblasts and lymphoblasts, can be grown in this fashion. But a 2-4 mm skin biopsy or 20 ml of amniotic fluid can probide sufficient quantities of cells for very sophisticated and complex diagnostic studies.

Amino Acid and Organic Acid Analysis

In 1908 Garrod had described alcaptnuria and cystinuria as disorders in which an abnormal metabolite could be detected in the urine of the affected patient, and he predicted, in the Croonian lectures, the routine application of screening tests for metabolites in excreta. The description of phenylketonuria (PKU) by

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DR. MARGRETTA REED SEASHORE, Assistant Clinical Professor of Human Genetics and Pediatrics; Attending Pediatrician, Yale-New Haven Hospital.

Følling required tedious qualitative analysis of the urine which the patient's mother had described as peculiar in smell. By 1946, partition chromatography was developed, and the application of the ninhydrin stain was followed shortly by the description of many new disorders of amino acid metabolism. The development of automated amino acid analysis by Spackman, Stein, and Moore in the late 1950s has made careful study of these disorders practical. Until the development of Gas-Liquid-Chromatography (GLC)-Mass Spectrometry, metabolites which did not stain with ninhydrin were virtually undetectable, with the exception of some ketones and ketoacids. GLC screening for organic acids has opened the door to diagnosis and treatment of a host of hitherto unknown disorders.[4]

Semi-automated and automated biochemical equipment has changed many analytical procedures from tedious, time-consuming procedures to rapid analyses suitable for testing large numbers of samples. Assays of enzyme activity and analysis of amino acid and organic acid concentrations are important examples.

The techniques mentioned have shown their greatest applicability in diagnosis of enigmatic disease states. More recently, they have been turned to detection of heterozygous carriers for recessively inherited disorders. Examples of such diseases are the mucolipidoses, lysosomal storage disorders, and disorders of amino acid and organic catabolism. Indeed, in most recessive disorders for which a biochemical mechanism has been elucidated, the carrier state can be thus detected. Disorders which demonstrate a predilection for a particular population lend themselves well to mass carrier detection techniques. Sickle cell disease, Tay-Sachs disease and thalassemia are particular examples.

The expression of many genetic disorders in cultured amniotic fluid cells[5,6] has made prenatal diagnosis of over 30 chromosomal and biochemical disorders possible. These techniques will be discussed in detail in a subsequent article. They are now being routinely used to give families at risk a substantial chance of having healthy children. The use of ultrasound for placental localization has increased the safety of amniocentesis, and new diagnostic approaches are continually being pursued.

Availability to Patients

With the advent of so many technical advances, the question appropriately arises as to how to make these advances available to patients who need them. Genetic counseling is rapidly becoming a complex medical specialty, encompassing many aspects of diagnosis, risk determination, communication, and family support. It is well suited to the multidisciplinary approach that can be mounted in a large medical center.[7,8] In the State of Connecticut there are two major medical centers and a State Health Department which have involved themselves in making genetic services available to the physicians and patients in the State. Nearly all genetic services available nationally can be obtained locally by the use of these three centers singly or in combination.

University of Connecticut Health Center

The Genetic Counseling Service at the University of Connecticut Health Center in Farmington is directed by Dr. R.M. Greenstein, assisted by a Nurse-Coordinator, Mrs. Maria McQueeney. Although this service is sponsored mainly by the Department of Pediatrics, all age groups, pediatric and adult are seen, and services for obstetrics are offered. The genetics laboratory can perform a variety of services which are an adjunct to the clinical evaluation. The cytogenetics laboratory offers a full complement of analyses. Q and C banding can be done on all tissues; Barr body and fluorescent body determinations, useful in the elucidation of disorders of sexual development, are offered. Immunogenetic studies can be done, including histocompatibility testing. The physical proximity of the Connecticut Red Cross Blood Bank, staffed by physicians who are University of Connecticut faculty members, provides ready access to blood grouping and determination of other protein makers. Family studies can be done.

The genetic counseling aspects of prenatal diagnosis are handled by Dr. Greenstein and his staff, while amniocentesis is done under the supervision of Dr. J. Gibbons at St. Francis Hospital. The laboratory analysis is performed at the Yale laboratories.

State Health Department Involvement

The Connecticut State Health Department maintains an office of biomedical statistics, directed by Dr. Merton Honeyman, and its services are available to state physicians. In addition, the Department provides all of the technical aspects of the Tay-Sachs carrier screening program, working in conjunction with the Tay-Sachs Disease Association of Connecticut, Inc. That program has been made possibly by a legislative appropriation. Dr. M.R. Seashore, at Yale, serves as medical coordinator for the state program and consultant in metabolic disease to the State Health Department. Dr. R.M. Greenstein of the University of Connecticut serves as coordinator for the Hartford area program, assisted by Dr. S. Taubman, of the University of Connecticut. Since the inception of the program a year and a half ago, nearly 2000 state residents have been screened for the Tay-Sachs carrier state.

Services at Yale University

At Yale University, the Department of Human Genetics, chaired by Dr. L.E. Rosenberg, comprises a Genetic Center funded by the National Institute of General Medical Sciences of the National Institutes of Health, one of only ten such centers in the United States. The monetary support is entirely for genetic research, providing grants for individual investigators, core support for cell culture and capital for major equipment needs. The research supported includes a broad range of basic science, such as mRNA in hemoglobin synthesis, gene expression in cultured human cells, as well as clinical research such as evaluation of genetic counseling services.

The Genetic Counseling Clinic, directed by Dr. Y.E. Hsia, has additional support from the National Foundation - March of Dimes for some personnel to deliver patient services. There are, however, no funds to subsidize patient fees, clinic space costs, or clinical equipment costs.

Chromosomal studies using the new banding techniques can be done on all tissues, and G banding is routinely done. Dr. W. Roy Breg, who supervises the cytogenetics laboratory, also directs the cytogenetics laboratory at the Southbury Training School.

Management of inherited disease, particularly inborn errors of metabolism, forms a large part of the clinical activities. These patients come from all over the State. Many have come from the State Health Department PKU and galactosemia screening program. The Biochemical Disease Detection Laboratory at Yale, directed by Dr. M.R. Seashore and Dr. K. Tanaka provides the full range of amino acid and organic acid analysis.

Regional Genetics Clinics

Two regional genetics clinics are sponsored by the Yale program. Bridgeport Hospital, under the auspices of its Department of Pediatrics, serves as the site for one monthly conference and clinic. Patients are referred by local practicing physicians and Bridgeport Hospital housestaff, and are seen and evaluated by a Yale geneticist (MRS). The other regional clinic is offered at Norwalk Hospital and is sponsored by its Pediatric Department. These clinics have served several aspects of medical care, providing services for patients at a facility closer to home, continuing education for community physicians, and broadened community experience for the university geneticist.

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Cooperative Trial of Chenodeoxycholic Acid for Cholesterol Gallstones

The National Cooperative Gallstone Study, funded by the National Institutes of Health, has announced the appointment of the Yale University School of Medicine as one of ten treatment centers. This Study is a double blind randomized trial of chenodeoxycholic acid for dissolution of cholesterol gallstones. Patients with radiolucent stones in a functioning gallbladder are presently being recruited for this study. Patients between ages 21 and 70 are eligible. Women of child-bearing potential are not eligible. The trial will last two years. If you have a patient whom you would like to refer for consideration for this study, please write or call Doctors Henry J. Binder or Rosemarie Fisher at the Yale University Treatment Center of the National Cooperative Gallstone Study, 333 Cedar Street, New Haven, CT. 06510. (203-436-8140)

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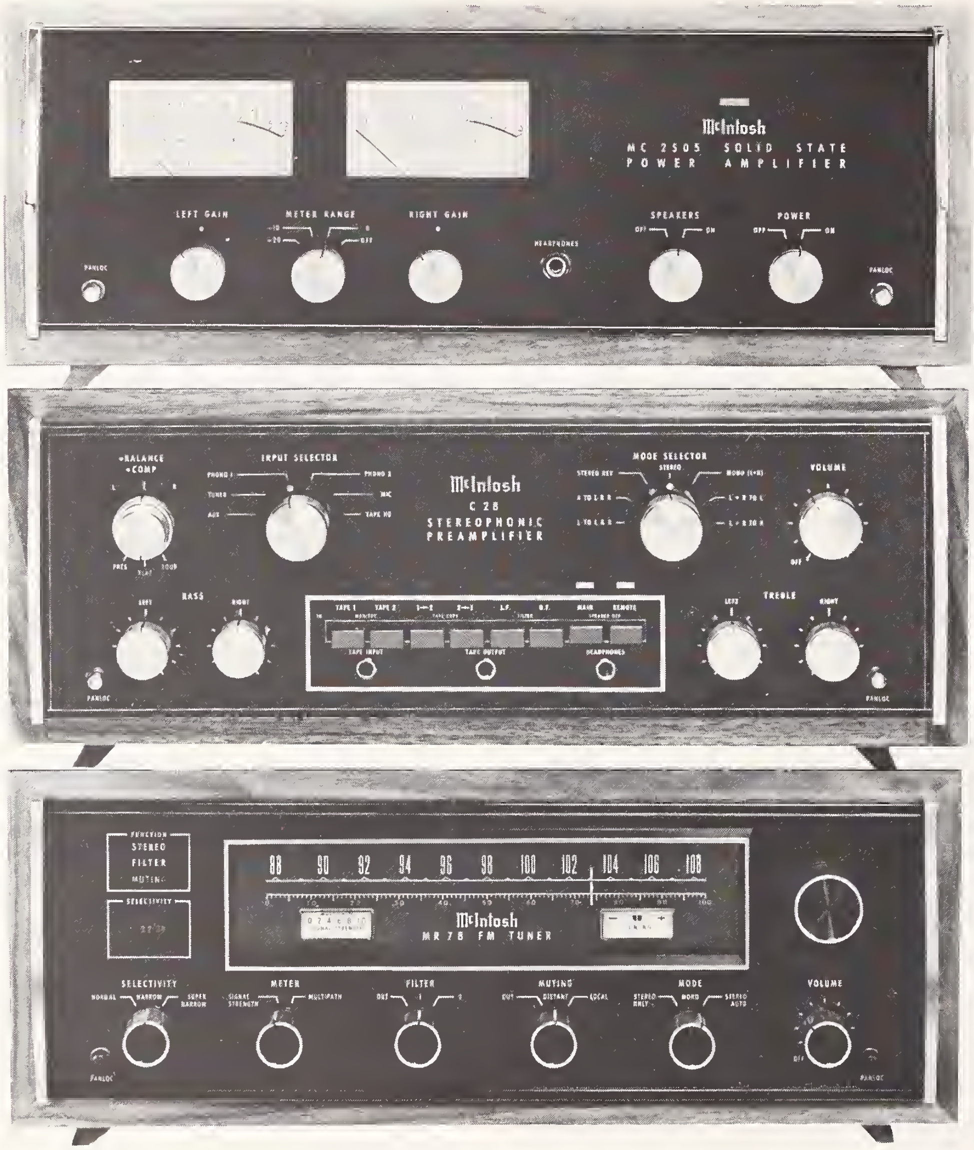

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Biofeedback: A Contemporary Overview

Ward J. McFarland, Jr., (B.S. Engin.), M.D. and Remo Fabbri, Jr., M.D.

Abstract—Biofeedback training has emerged as an intriguing new approach to the treatment of psychosomatic disorders.

Although part of its effectiveness may result from a non-specific reduction in anxiety as found in self hypnosis, meditation, or placebo therapy, recent experimental evidence has suggested that biofeedback training allows the autonomic nervous system to "learn" new and more adaptive reaction patterns that are alternatives to stress related tension.

The results of current research support the usefulness of biofeedback training in neuromuscular reeducation and in the treatment of anxiety, muscular spasm, tension headaches, and migraine. Therapeutic results in other disorders, although tantalizing, remain as yet inconclusive.

Biofeedback training is a therapeutic technique by which the patient learns to exercise control over a physiologic process occurring within his body. At present there is substantial evidence to suggest that it is of therapeutic value in the treatment of certain stress-related disorders. Concomitantly with the recent deluge of popularized articles about biofeedback therapy, exaggerations of its efficacy have threatened to undermine its just position as a medical therapy. Even though there is little evidence to indicate that biofeedback can produce the next step in the evolution of man, there is ample data to suggest that in certain syndromes it is of therapeutic value. In addition, it is of interest because of the insights it affords into the psychophysiologic functioning of the human body.

The process of biofeedback training is, simply stated, a learning experience for the patient. By the use of modern bio-medical instruments, the patient first learns how a specific physiologic system within his body is operating and then learns to modify the performance of this particular system. Detailed information about a physiologic phenomenon, such as tension in a muscle group, is delivered to the patient through an electronic monitoring system. The patient himself receives the information by observing a meter, listening to a variably pitched tone, seeing a co-ordinated light signal or detecting other quantitatively related phenomena. By constant awareness of the physiologic activity occurring, the patient can then learn to modify or to control what is occurring. Thus, by trial and error, an association of a mental image or state of mind can be formed with a given physiologic change. With practice, this change can then be produced without the aid of electronic monitoring simply by reproducing the associated mental image, suggestion or state of mind.

Since changes in the level of functioning of the autonomic nervous system can now be readily measured by modern instruments, disorders affected by autonomic activity, such as tension and other psychosomatic problems, have become the primary target for biofeedback therapy. Of particular importance is the fact that dysfunction of the regulatory mechanisms of the autonomic nervous system underlies much of psychosomatic disease and may also affect the degree of physical response to organic disease. Although the actual neurophysiologic mechanisms are complex and incompletely understood, cortical, limbic, hypothalmic and reticular activating system factors appear to be of primary importance. (An excellent discussion of this subject is given by Kroger.[1]) The most frequent example of failure of autonomic self-regulation is the chronic anxiety state. Because of the resulting high level of autonomic arousal accompanying stress, disturbing physical symptoms may result. The presence of these symptoms then tend to increase even further the individual's anxiety level, thus establishing a self-perpetuating cycle. In addition, some individuals seem to have a lower threshold for symptom development in a particular physiologic system and thus show symptoms preferentially or exclusively in that area (e.g., gastric hyperacidity, headache or tachycardia). Treatment may therefore involve either reduction of the distressing emotional state (anxiety) or raising the threshold of reactivity of the affected systems.

The clinical applications of biofeedback training can be divided into two broad areas: (1) reduction of anxiety and of the level of autonomic arousal and (2) regulation of specific physiologic processes. In the first category, the feedback signal must be an accurate indicator of overall arousal. The use of the frontalis EMG as the feedback signal has been useful for teaching anxiety control.[2] Raskin, et. al.[3] used this method for reducing anxiety in patients who had been refrac-

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DR. REMO FABBRI, JR., is a private practitioner of psychiatry in New Haven where he specializes in psychosomatic and sexual problems. He is a clinical instructor at the Yale University School of Medicine and a clinical associate at the University of Connecticut Medical Center.

tory to minor tranquilizers and psychotherapy for two years.

However, it is important to note that there is nothing unique to biofeedback about treating psychosomatic disorders through the non-specific reduction of anxiety. The occasional success of faith healing, reassurance, tranquilizers and placebos are likely due in large part to this mechanism which decreases overall sympathetic arousal and interrupts the vicious circle of anxiety/somatic dysfunction/anxiety. Techniques such as Zen, Yoga and Transcendental Meditation have recently been studied from a psychophysiologic viewpoint. It would appear that these methods can reliably cause marked reduction of anxiety and concomitant changes in EEG, heart rate, blood pressure, oxygen consumption, and pain threshold.[4] Although the effects are dramatic, the amount of training and dedication required limits their clinical usefulness, and uniformly positive results among diverse groups within the general population are not well documented. Self-hypnosis can also provide useful anti-anxiety effects and may require less training than classical meditation, but is also limited by individual variations in "hypnotizeability."

Generalized reduction of anxiety and concomitant reduction of autonomic arousal have been seen following the practice of any technique of relaxed concentration, whether practiced as meditation, hypnosis, progressive muscle relaxation or almost any process which promotes a non-demanding focusing of attention on some non-stressful stimulus.[1-5] Certainly, biofeedback training involves this type of attention and may be the only necessary explanation for some of the results in anxiety reduction. Nevertheless, biofeedback training can provide an easy method for teaching someone to reduce anxiety as well as a semi-quantitative measure of the degree of relaxation. For a technologically oriented culture, biofeedback may be more acceptable than more esoteric or mystical approaches for the reduction of anxiety.

In addition to facilitating relaxation there is much evidence that biofeedback allows for specific "reprogramming" of dysfunctional autonomic activity. This then allows for the possibility of dealing directly with the "target area." Clearly, psychosomatic disorders may develop without anxiety as the result of external stresses (other illnesses, job pressure, etc.) which may be impossible or difficult to modify. If stresses are severe enough to cause symptoms, the nature of the symptom depends on the individual's autonomic arousal pattern and on the thresholds of reactivity of the individual physiologic processes. Although sympathetic or parasympathetic blocking drugs are frequently used in an effort to alter the end organ response, the teaching or conditioning of the autonomic nervous system to react differently is a safer and more specific means of treating psychosomatic disorders.

The experimental modification of specific nervous system responses was demonstrated almost fifty years ago by Pavlov. Since then psychological conditioning techniques, particularly operant conditioning, have been successfully used in the laboratory to produce new or altered response patterns in areas as diverse as salivation, gastric blood flow, intestinal activity, heart rate, peripheral blood flow, systolic and diastolic blood pressure, EEG and even glomerular filtration rate.[6, 7] Interestingly, results obtained in animals have also been reproduced in human subject.[8, 9] Although there are several techniques for conditioning these responses, they all share one similarity: as soon as the desired response (e.g., faster heart rate, increased salivation) even minimally occurs, the subject is immediately rewarded (positive reinforcement). After sufficient conditioning or "training" in this fashion, the new response becomes established or learned.

A theoretical basis for the acquisition of autonomic responses through biofeedback training can thus be established from the results of such laboratory conditioning techniques. The key factor is that biofeedback training, like operant conditioning, also reinforces a particular physiologic response in a positive way. However, unlike the food or water used in laboratory animals as a positive reward, the feedback signal itself constitutes an indirect but positive reward in biofeedback training. The ability of the conscious and cooperative patient to use the feedback signal as a meaningful intermediate goal and as an indirect reinforcer is of great importance. A desired change in the feedback signal indicates progression towards some concrete goal, such as improvement of a symptom.

Nevertheless, in spite of clearcut evidence of learning within the autonomic nervous system, it is difficult to assess the degree to which this actually occurs in clinical therapy and how much of the reported results are due merely to a non-specific reduction in anxiety. Of course, if the patient improves, it little matters clinically which mechanism is responsible. However, in order to evaluate, compare and improve techniques, it is desirable to analyze the effects due to each of the operant mechanisms. Although Strobel and Glueck[10] have proposed one approach, few other available studies on biofeedback have adequately succeeded in differentiating non-specific from specific mechanisms. In addition, it has proven most difficult to devise satisfactory controls in biofeedback research. Nevertheless, convincing results have been obtained in neuromuscular re-education and the control of both tension and migraine headaches. A list of reported successful uses of biofeedback is shown in

Table I. The diverse range and imaginative nature of this list, which includes several notoriously refractory disorders, explains the tendency of the popular press to tout biofeedback as a panacea. While the second half of Table I is based on preliminary and very limited results, the first four areas have undergone studies sufficient to provide some tentative conclusions.

Modification of skeletal muscle activity has been achieved with biofeedback training techniques in certain functional and organic disorders where normal conscious control of a muscle is impaired. Electromyographic (EMG) feedback provides a very sensitive measure of neuromuscular activity enabling very small changes in muscle contraction levels to be monitored. Thus, the patient is afforded the advantage of augmented proprioception by means of the external equipment. Much of the preliminary research with EMG feedback has been devoted to reduction of excessive motor activity, as might be found in certain tension states,[2] muscle spasm disorders or muscular contraction (tension) headache. Pain and anxiety may hinder the patient from recognizing and voluntarily reducing this excess activity; EMG feedback clearly appraises the individual of any muscle tension and rapidly assists learning of complete muscle relaxation. EMG feedback is rapidly being accepted into the clinical treatment of tension headache following a number of studies which have confirmed Budzynski's conclusion that EMG feedback can effectively alleviate this common disorder.[11] EMG feedback has been also used successful in treating spasmodic torticollis.[12,13] Rather remarkable was the fact that eighteen out of nineteen patients were able to learn to reduce the muscle spasm during practice and twelve obtained lasting improvement. Patients with trapezius spasm following neck injury could rapidly relax the muscle with EMG feedback after failing to do so without access to the monitoring equipment.[14] Ability to relax spastic peroneus longus and gastrocnemius muscles has also been demonstrated in several cases where the muscle hyperactivity was due to organic causes.[15,16] Further research hopefully will apply this potentially powerful technique to other disorders with excessive muscle contraction, such as rheumatoid arthritis or low back pain.

Table I

REPORTED APPLICATIONS OF BIOFEEDBACK TRAINING

Physiologic Parameter	*Reported Applications*
1) Electromyogram (EMG)	deep muscle relaxation tension headache muscle spasm spasmodic torticollis neuromuscular re-education
2) Heart Rate	arrhythmias conduction disorders
3) Blood Pressure	essential hypertension
4) Skin Temperature or Peripheral Blood Flow	vascular headache Raynaud's disease peripheral vascular disease
5) EEG	
a) Alpha rhythm (8-12 Hz)	anxiety
b) Theta rhythm (4-7 Hz)	insomnia heightened creativity
c) sensorimotor rhythm	seizure disorders
6) Electrooculogram (EOG)	blespharospasm
7) Stomach pH	peptic ulcer disease
8) Bowel Sounds	irritable bowel
9) Breath Sounds	hyperventilation
10) Penile Diameter	disorders of sexual arousal
11) Intra Vaginal Pressure	vaginismus

Perhaps the most exciting applications of EMG feedback are in the areas of neuromuscular re-education. Normal proprioceptive awareness may be absent in situations where the muscle has greatly atrophied or has only partly been reinnervated. EMG feedback assists in the restoration of function by giving the patient immediate awareness of even the slightest increase of muscle contraction. In a number of situations including Bell's palsy, stroke and polio, where patients had been unable to improve their muscle function using conventional rehabilitative techniques, EMG feedback training often resulted in dramatic improvement in strength and function.[17-19]

Because of the health problems presented by cardiovascular disorders, it is not surprising that biofeedback techniques have been utilized in attempts to improve cardiovascular autonomic activity.[8,9] Encouraging but inconclusive results have been obtained in some of the clinical studies. Feedback of a signal dependent on the heart rate has reportedly allowed some individuals to reduce a variety of arrhythmias, such as paroxysmal atrial tachycardia, sinus tachycardia, and even premature ventricular contractions.[20,21] Use of blood pressure as the source of the feedback has led to occasional successes in treating essential hypertension.[22,23] The role that anxiety reduction and other factors play in explaining these results will only be clarified with larger and more thorough studies. Voluntary increases in peripheral blood flow can also be easily learned by the use of a feedback signal affected by hand or forearm skin temperature. Sargent, *et. al.*, have achieved an improvement in frequency and severity of migraine headaches in almost eighty percent of patients;[24] apparently abrupt increase of forearm blood flow at the onset of a migraine headache can halt the continuation of the abnormal cerebrovascular responses. Hand temperature feedback has been used by a number of clinical researchers with early results confirming its usefulness in this troublesome disorder. The usefulness of this technique for increasing peripheral blood flow in Raynaud's or peripheral vascular disease has not as yet been sufficiently investigated to draw any conclusions about its efficacy in these disorders.[25]

In conclusion, biofeedback training affords the physician an additional treatment modality to be added to traditional pharmocologic, surgical and psychologic therapies. The combined use of modern technological instrumentation and operant conditioning techniques affords the responsible and motivated patient a safe way to improve his physiologic functioning. Through a simple method for the reduction of generalized anxiety as well as through the learned control of specific autonomic processes the victims of many psychosomatic ills can be efficiently and safely helped.

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Connecticut Resolutions:
125th Annual AMA Convention, 1976

Of the 150 or so resolutions introduced at the June-July Clinical AMA Meeting in Dallas, the Connecticut delegation introduced 12, proportionately more than its size. Each of its resolutions satisfied the criterion of being of national interest, more than local to Connecticut. All but one were either adopted or referred to the Board of Trustees for study and report at the next convention.

1. Effect of Full-Time Chiefs of Service and Medical School Affiliations on Residency Approvals.

This resolution read: "While residency review committees do not state a full-time chief of service or education and a firm affiliation with a medical school are prerequisites to approval of a residency program in a community hospital, in fact, without them the chances of obtaining approval are minimal." It asks that "approval of residency programs be based on the worth of the program, not on whether it has a full-time or part-time person who administers or supervises; and that approval not require affiliation with a medical school; and that the Council on Medical Education be instructed to support these principles vigorously." Discussion was strongly supportive of this resolution. Though it was a reaffirmation of existing AMA policy, it was emphasized and adopted.

2. Ethics in Treatment of the "Hopeless" Case.

Using the Karen Ann Quinlan case as an example of a general problem, the resolution would make it ethical for a physician to "pull the plug" or cease extraordinary treatment in a patient in irreversible and permanent coma—though not dead by present criteria. Unfortunately, this resolution was clouded by discussion with two other resolutions which dealt more with the legislative aspects and definition of death, so that what emerged from the reference committee was a reaffirmation of previous AMA statements on death, and excerpts from its "death with dignity" policy.

Not only was there lengthy discussion before the reference committee, but also on the floor of the House of Delegates. The New Jersey delegation introduced still another resolution, more specifically dealing with the problem in a Karen Ann Quinlan case. However, it did not muster a majority vote. The delegates finally adopted the recommendation of the reference committee that "the cessation of the employment of extraordinary means to prolong the life of the body where there is irrefutable evidence that death is imminent is the decision of the patient and/or his family." This was excerpted from the death with dignity policy statement adopted by the House a year ago, in response to a Connecticut resolution.

The House also requested the Judicial Council to review its policy positions in light of recent events and report back to the House at the next session. To us, the weakness in using this statement for the class of patient exemplified by Karen Ann Quinlan is the lack of guidelines or definition for "extraordinary" and "imminent."

As present, Karen is not dead; she is medically considered to be permanently comatose; she is receiving gastric tube feeding and antibiotics.

3. The AMA and Medical Ethics.

The thrust of this resolution is to reaffirm the leadership role of the AMA in medical ethics for the profession, particularly in the new so-called bioethics. It calls for a reassessment and report by the Judicial Council on this subject to the next session of the House.

The sentiment before the committee and House strongly supported the intent of the resolution. The greatest problem seems to stem from the Judicial Council itself, which considers itself to be solely an appellate body without authority to initiate study or action on important ethical problems now confronting not only the profession but society in general.

4. Allocation of Federal Funds for Health on the Basis of Revenue-Sharing or the "Block-Grant Principle."

This would have the AMA study the possible impact of the allocation of federal funds for health programs on the basis of revenue-sharing or the "Block-Grant Principle," now being discussed both at the federal level, and by the governors.

The Board of Trustees already opposes the administration block-grant proposal. It was referred to the Board; more will be heard about this in the near future.

5. Uniform Health Service Areas.

This was considered along with six other resolutions dealing mostly with the National Health Planning and Resources Development Act (PL 93-641). All discussants agreed that the law was objectionable; in fact, the AMA has joined the state of North Carolina, along with the North Carolina Medical Society, in challenging the constitutionality of the law. . . . There was difference of opinion as to making area designations of HSA to coincide with those under other programs. This was referred to the Board of Trustees for study and report.

6. Smoking in Visual Media.

The thrust of this resolution was for the AMA to do all it could to discourage the use of smoking in all visual media, especially TV, so as to discourage depiction of smoking as a norm in American culture as one means of influencing teenagers to refrain from acquiring the smoking habit.

This resolution was analogous in purpose and substance to a report on violence in TV by the Board of Trustees and a resolution by the California delegation which was also adopted by the House.

7. AMA State Societies and the JCAH Guidelines as to Due Process.

The essence of this resolution was for the AMA, in addition to its own efforts, to call upon state societies, in cooperation with state hospital associations, to conduct a continuing survey of the bylaws of hospitals to determine whether or not each complies satisfactorily with the spirit, if not the letter, of the provisions for due process regarding physicians' privileges as outlined in the 1971 Guidelines of the Joint Commission on Accreditation of Hospitals. It was discussed with the following resolution:

8. Due Process in the JCAH Guidelines.

This requested that the AMA through its Board of Trustees review the original, revised, and amended due process provisions in the Guidelines of 1971, and report to the House at its next session with regard to whether the current Guidelines conform to the type of hearing endorsed by the House in recent years on several occasions.

These Guidelines, though an improvement over virtual absence of any in previous ones, are still complicated, complex, and administrative in type. Small hospitals especially may find them difficult to adopt as written, and even difficult to formulate according to the spirit therein. Furthermore, they were issued as guidelines, not compulsory on hospitals to adopt as written. The resolution would have its surveyors report on their experience in hospitals with them to the House of Delegates of the AMA.

The reference committee reported that it "devoted an hour and one half of its hearing time, as well as an hour of time in its executive session to the consideration of these resolutions and felt that problems posed in their implementation were too complex to permit resolutions at this time of the House of Delegates." It recommended referral to the Board of Trustees to study and report back. This was adopted.

9. American Medical News.

A serious problem of communication now exists—How to communicate with and about the AMA, especially for state society members who are not AMA members and consequently get no AMA communications.

This resolution suggests that consideration be given to distribution of those issues of the *American Medical News* dealing with the actions of the House of Delegates to all physicians, including physicians who are not members of the AMA, with priority being given to distribution to those members of state medical societies who are not members of the AMA.

Testimony was favorable. It was referred to the Board of Trustees for consideration within the overall member recruitment program.

10. Continuing Medical Education Newsletter.

This would have the AMA, as soon as financially feasible, resume publication and circulation of the Newsletter, *Continuing Medical Education,* a unique and excellent publication, preferably on a financially self-sustaining basis.

This was referred to the Board of Trustees for consideration.

11. Medical Disciplinary Committees and Negotiations.

This would have the AMA's new Department of Negotiations include within its subjects the proper conduct of a medical disciplinary hearing according to the Principles of Due Process and procedure as established by the AMA and by the JCAH.

The Judicial Council, however, expressed its opinion to the reference committee that conduct of disciplinary hearings had nothing to do with the art of negotiation. Though we disagreed with the Council in its opinion, we did not press the point. The resolution was not adopted.

12. Unnecessary Surgery.

This resolution was directed at the growing practice of mandatory second opinion where surgery has been recommended to patients. It would state that if such a consultation were mandated by a third party payer, it would be improper for the designated consultant to assume direct or indirect control of the patient's further care in the case, or to be paid for services beyond that of his consultation; and also, that the terms "necessary" or "unnecessary" had little or no value without more exact definition.

Discussion before the reference committee and on the floor of the House was prolonged and intense. Michigan and California already have the problems; their delegates especially strongly advised adoption. However, because of difficulties in detail, the House voted to refer this to the Board of Trustees for study and report at the next session.

One is entitled to ask—"What happens to such resolutions? What influence do they have?

First, not only members of the profession, but the public, the media, and various governmental agencies recognize that adopted resolutions are the official policy of the AMA, and represent the action and thinking of the representatives of the 140,000 or so members scattered throughout the country.

Most resolutions mandate or instruct AMA officers, committees, or the AMA organization to carry out the purpose and substance of such resolutions through corresponding committees or agencies of other organizations or the government—for example, Congressional committees, agencies of the Department of HEW, the Joint Commission of Hospitals, the American Hospital Association, other professional associations, the state medical societies themselves, the media, and others.

Resolutions and actions are rarely binding on the state societies; the AMA is a federation of state societies, and only rarely does the AMA through its constitutional powers make binding rules on state societies. Though the AMA does not have the power which the public and even many physicians think it has, one should not go to the other extreme and minimize its influence.

One last note: The CSMS delegates are only too happy to act as a conduit in introducing resolutions concerning issues and problems that counties, hospitals or individual members may have, provided they are more than local interest. One should ask—"Is this a purely local problem? Is it state, or is it really a national problem?" Increasingly, problems which individual physicians see, even in the boondocks, are a consequence of laws and regulations made at the state level and especially at the national level. As the Washington influence on medical practice and the delivery of health care becomes greater and more important, the necessity and importance of a national organization such as the AMA likewise become more important.

Fred Fabro, M.D.

State Societies Dues for the Year 1976

Below are the fifty-one State Societies in the order from the highest dues assessment down to the lowest:

1.	Wisconsin	$300.00
2.	District of Columbia	275.00
3.	Wyoming	275.00
4.	Nevada	260.00
5.	Idaho	250.00
6.	Alaska	250.00
7.	Georgia	250.00
8.	Kentucky	225.00
9.	Minnesota	225.00
10.	Maine	225.00
11.	Hawaii	215.00
12.	Montana	200.00
13.	Iowa	200.00
14.	South Carolina	180.00
15.	South Dakota	175.00
16.	Colorado	170.00
17.	Arizona	170.00
18.	Utah	165.00
19.	Delaware	165.00
20.	California	165.00
21.	Maryland	160.00
22.	Oregon	155.00
23.	Michigan	155.00
24.	West Virginia	150.00
25.	Oklahoma	150.00
26.	Indiana	150.00
27.	Pennsylvania	$150.00
28.	Washington	147.00
29.	North Carolina	145.00
30.	New Mexico	135.00
31.	Illinois	130.00
32.	Texas	130.00
33.	North Dakota	125.00
34.	Alabama	125.00
35.	Ohio	125.00
36.	Arkansas	125.00
37.	Kansas	125.00
38.	Mississippi	125.00
39.	Vermont	125.00
40.	Florida	125.00
41.	New Hampshire	120.00
42.	New Jersey	110.00
43.	Massachusetts	110.00
44.	New York	100.00
45.	Nebraska	100.00
46.	Rhode Island	100.00
47.	Louisiana	100.00
48.	Missouri	100.00
49.	Connecticut	100.00
50.	Virginia	85.00
51.	Tennessee	80.00

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Ethinyl Estradiol	0.005 mg.
Methyltestosterone	1.25 mg.
L-lysine	100 mg.
Nicotinic Acid	12.5 mg.
Ferrous Iron	2.82 mg.
Vitamin A	2,500 U. S. P. Units
Vitamin D	250 U. S. P. Units
Thiamine Mononitrate	2.5 mg.
Riboflavin	2.5 mg.
Ascorbic Acid	25.0 mg.
Folic Acid	0.1 mg.
Vitamin B-12	1.5 mcg.
Methionine	12 mg.
Choline Bitartrate	15 mg.
Inositol	10 mg.
Calcium Pantothenate	2.5 mg.
Pyridoxine	0.25 mg.
Copper (from Copper Sulfate)	0.25 mg.
Zinc (from Zinc Oxide)	0.25 mg.
Iodine (from Potassium Iodide)	0.075 mg.
Calcium (from Dicalcium Phosphate)	72.5 mg.
Phosphorus (from Dicalcium Phosphate)	55 mg.
Potassium (from Potassium Sulfate)	2.5 mg.
Manganese (from Manganese Sulfate)	0.5 mg.
Magnesium (from Magnesium Sulfate)	0.5 mg.

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Development of the Connecticut Tumor Registry

Susan T. Gershman, M.P.H., John T. Flannery, B.S., Harold Barrett, M.D., Robin K. Nadel and J. Wister Meigs, M.D.

Abstract—The Connecticut Tumor Registry, established in 1935 in the State Department of Health, now includes information for 300,000 cancer patients. This oldest U.S. population-based registry grew from efforts of New Haven's Cancer Committee, formed in 1930 by physicians, health professionals and laymen, to combat the disease. In 1933, the State Medical Society organized statewide efforts to promote enabling legislation and has supported physician and hospital cooperation for registration of patients, as has the American Cancer Society. The Medical Society's Cancer Coordinating Committee has continued active work with medical and other groups throughout Connecticut. Since 1957, support of the Registry by the National Cancer Institute has paralleled increasing national concern. Connecticut's Registry and its recently established (1974) research affiliate, the Connecticut Cancer Epidemiology Unit in New Haven are part of the SEER group of 9 U.S. population-based cancer registries supported by NCI for national and international cancer epidemiology studies.

Introduction: National attention devoted to cancer as a major medical and social problem makes it appropriate to review the history of one of the most significant, scientific and administrative resources available to cancer professionals, the Connecticut Tumor Registry, which, since 1935, has been a part of the State Department of Health. An indicator of its importance has been Registry support, after 1957, by the National Cancer Institute (NCI), with important increases since the passage of the National Cancer Act in 1971. The National Cancer Plan contemplates growing use of the Registry in projects concerned with international as well as more regional cancer questions.

Some of the earliest efforts to coordinate and organize cancer services were begun in Connecticut, and depended upon an active and articulate medical profession and interested citizenry. Like that of many other institutions, the early history of the Registry demonstrates the particularly American habit of citizen participation and innovative local initiative.

The Connecticut Tumor Registry is the oldest population-based registry in the United States, encompassing 40 years of cancer reporting. Though Sweden and Norway have registered certain cancer cases for comparable time periods, the Connecticut Tumor Registry is the largest population based cancer registry, holding information on 300,000 tumors diagnosed in Connecticut residents. In spite of the many pressures toward new directions in cancer research and control, the Registry continues to maintain its primary commitment to service to physicians in patient care by providing systematic, complete and accurate information on cancer morbidity and mortality. From the start, Registry service has included follow-up for hospitals and physicians.

Throughout the years, and in the presence of a substantial number of structural changes within the Health Department—perhaps related to political change, but more probably related to conceptual uncertainty about the disease and its control—the Registry has experienced a remarkable stability of leadership. Originally the Registry was assigned to the Preventable Disease Unit. Dr. Eugene Lamoreaux served as Director of that division from 1939-1948, and was succeeded by Dr. James Hart whose service was completed upon his retirement in November, 1975. Direct responsibility for the Registry passed from Dr. Matthew H. Griswold who was appointed in 1935, to Dr. Henry Eisenberg in 1968. Dr. Barbara Christine assumed the role of Director from November 15 of that year until her retirement in February, 1975.

Originally the research and data management components of the cancer program could exist within the same organizational unit. It gradually became apparent that the twin demands for research output and reliable data management would require functional and administrative separation, though successful operations would continue to depend upon close cooperation. The Connecticut Cancer Epidemiology Unit was, therefore, established in 1974 through NCI(1) as the research affiliate of the Registry, and was assigned the major responsibility for analysis of Registry data. The Registry was most recently reassigned in 1974 to the Health Department's newly created Division of Health Statistics under Dr. Merton

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SUSAN T. GERSHMAN, M.P.H., Memorial Sloan-Kettering Cancer Center, New York, New York; JOHN T. FLANNERY, B.S., Director, Connecticut Tumor Registry, Hartford; HAROLD BARRETT, M.D., Deputy Commissioner, Connecticut State Department of Health, Hartford (deceased, June 1976); ROBIN K. NADEL, Staff Assistant, Yale University School of Medicine; J. WISTER MEIGS, M.D., Clinical Professor of Epidemiology, Yale University School of Medicine, and Director, Connecticut Cancer Epidemiology Unit.

Supported by National Cancer Institute Contract Number N01 CP 33235.

S. Honeyman. Mr. John T. Flannery was appointed to the position of Director of the Registry in 1975 to enhance cooperation with medical professionals and to correlate the operations of the Registry with the objectives of other national, state and local agencies.

Early History of the Registry

Cancer Committee of New Haven: The earliest efforts to systematically amass cancer data were initiated in 1930 by a group of physicians, health professionals and laymen in New Haven, who, in cooperation with the New Haven Board of Health, organized the Cancer Committee of New Haven. The broad community support for this Committee is indicated by the names and affiliations of the members.* Their work was initially supported by the New Haven Foundation and the Anna Fuller Fund.[2, 3] The Committee Secretary, Osborne A. Day, was a member of the New Haven Foundation; Dr. George Smith represented the Anna Fuller fund. The Committee's original objective was to develop an educational program throughout the city, to encourage people to recognize early symptoms of the disease and seek medical attention promptly.

Their effort developed in response to alarming statistical trends. Though the data available to them were sparse and often ambiguous, New England appeared to have the highest cancer mortality rates in the country, and New Haven one of the highest for any city. In their final report of 1935,[4] the Committee noted that the mortality rate for New Haven residents had increased from 66 to 180 per 100,000 in the period 1900 to 1934. The foreign born showed higher mortality rates than the native born, though the apparent gap was closing rapidly. Among those hospitalized for cancer, fewer than 20% would survive longer than five years. Then, as now, it was thought that delay in seeking treatment was the most significant factor in the failure to help the patient more effectively. The Committee also worked to ferret out the distinct effects, if any, of residence and social class. New Haven data were analyzed on a ward-by-ward basis, but the limitations imposed by a lack of an accurate population denominator and other measures could not be overcome.

The Cancer Committee had little experience to guide them. Detroit and Massachusetts had undertaken similar statistical efforts, but local differences made comparisons futile. For example, about 48% of the patients treated in the three New Haven hospitals were not city residents. New Haven was becoming a center for treatment, with, perhaps, a greater percentage of more difficult cases. At that time, more than half of the cancer deaths occurred in private homes, and were often not reported as such.

As the Committee proceeded to compile and analyze cancer data from the three hospitals, they were able to expand and reformulate their objectives. Cancer clinics in both Grace and New Haven hospitals had been organized as a by-product of the Committee's work. Uniform records had been designed for the two clinics, and staff instructed in the maintenance of records for cancer patients. As hospitals were unable to assume the financial burden of cancer follow-up, and as a uniform approach to data collection was essential for meaningful analysis, the committee undertook the responsibility for follow-up. Thus, the initial educational objectives evolved to include assistance to practicing physicians and hospitals in obtaining information on the status of their patients, and provision of information to the American College of Surgeons for verification of five year cures.

Tumor Study Committee of the Connecticut State Medical Society: The effects of this early work were soon recognized throughout the state, and on May 25, 1933 the State Medical Society adopted a resolution summarizing their concerns and considerations, and appointed the first Tumor Study Committee. The most significant sections of the resolution are repeated here:

> Whereas, the greatest hope of reducing the increasing mortality from this group of diseases lies in diagnosis and treatment in the early state: and:
>
> Whereas, the public through education is becoming more and more insistent upon availability of facilities where these fundamentals in the management of cancer cases can be fulfilled, and:
>
> Whereas, the medical profession and the hospitals are the only forces capable of furnishing the needed service in this field, and must assume the full responsibility for the immediate initiation and conduct of this: therefore be it:
>
> Resolved that the Connecticut State Medical Society shall appoint a Tumor Committee whose function it shall be to survey the existing conditions and stimulate interest in the movement for cancer control in accordance with these programs or in accordance with such modifications thereof as will be best met by the needs of the state.[5]

First Legislation for Connecticut Tumor Registry: With the active support of hospitals and their staffs, the Tumor Study Committee worked to coordinate statewide activity. By 1935, public hearings were held on behalf of Senate Bill 101, which was signed into law by the Governor on June 13. In addition to appropriating $10,000 to implement the program, the law stated:

> The State Department of Health is authorized to make investigations concerning cancer, the prevention and treatment thereof, and the mortality therefrom, and to take such action as it may deem will assist in bringing about a reduction in the mortality due thereto.[6]

In the same year, the New Haven Cancer Committee willingly disbanded in favor of the statewide program, and made a number of important recommendations which are summarized here. What is immediately apparent is the close resemblance between their original conceptualization and the present operational realities of the contemporary Registry:

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*see concluding paragraph

The Committee urged that the degree of error in death certificate reporting be reduced by greater care in noting the presence of malignancies as well as the actual cause of death; that case records include detailed descriptions of lesions as well as the data for first consultation and first treatment; that local educational activities be continued; that records be standardized; that follow-up of post-hospital cancer cases be continued; and that the hospital Cancer Conferences held at that time be continued and expanded to provide physicians greater contact and opportunities for exchange of information regarding patient care.

Federal support was forthcoming almost immediately, and in 1936 the Public Health Service appropriated $6,683 for salaries and other expenses for cancer activities.[7]

The Connecticut State Department of Health

Division of Cancer Research: With the new legislation, the Connecticut Health Department quickly moved to create the Division of Cancer Research in December 1935 as a new unit of the Preventable Disease Section. Most significantly, the former Executive Secretary of the New Haven Cancer Committee, Herbert F. Hirsche, C.P.H., was engaged as Research Statistician in the new cancer division. Dr. Griswold, as Chief of the Chronic Disease Section, was appointed to direct the educational and statistical research programs. The Division of Cancer Research acted in close cooperation with the State Medical Society's Tumor Study Committee, whose Chairman, Dr. Thomas H. Russell, had been a member of the Committee.[8] Dr. Charles Larkin was also instrumental in the earliest planning stages. Thus the emerging cancer program focused on three objectives: (a) to conduct morbidity and mortality studies of the disease (statistical analysis), (b) to maintain facilities for the care and treatment of cancer patients (clinic services), and (c) to insure diagnosis and treatment at the earliest possible moment, (education).

Initial Registration Methods: In the early years, 1936-40, a pilot study was undertaken to determine the best way to approach the statewide cancer work. Formal Registry operations began in 1941. The initial task was to visit each participating hospital and abstract cases from 1935-40. The original abstracts were kept in the hospitals to establish individual local tumor registries, and a hospital tumor clinic secretary was trained in the work of cancer reporting. As hospitals were added to the list of those included, abstracting was carried back to 1935. By December, 1942, 22 hospitals comprising over 90% of the hospital beds in Connecticut were reporting. By April 1, 1943, all of the records had been indexed, coded, checked in the Bureau of Vital Statistics as to the fact of death, sorted and tabulated. Remaining hospitals were contacted and arrangements made for their incorporation into the new Registry system.[9] The day to day work of Registration has been supported in part for many years by direct subsidy from the State to the hospital tumor Registries, according to the precedent established by the New Haven Cancer Committee.

Connecticut State Medical Society

Formation of the Association of Tumor Clinics: Simultaneously, program coordination among physicians was undertaken by the State Medical Society. In support of the second objective of the state program, the development of cancer treatment facilities, the Tumor Study Committee organized the Association of Tumor Clinics in 1935. Dr. Charles L. Larkin was appointed chairman. In 1935, only 10 hospitals in Connecticut had active tumor clinics, and the Committee moved to assist development in the remainder. Quarterly meetings of the Association were planned to stimulate interest in improved diagnosis and treatment, and subcommittees were formed for therapeutic standards, pathology, records and clinical programs. The Association was also charged with the responsibility of distributing scientific knowledge about cancer and initiating research programs. Finally, educational material was to be distributed in cooperation with the State's Division of Cancer Research.[10,11]

Cancer Coordinating Committee: In 1944, the Tumor Study Committee again reviewed the organization of the Connecticut cancer program, and approved a policy recommended by the Executive Committee to establish autonomy as a component organization of the state program. Articles were formed for the Association of Tumor Clinics in November, 1944. The Tumor Study Committee would approve applications for membership in the Association by newly established hospital clinics. To complete the developing structure, the American Cancer Society (then named the American Society for the Control of Cancer) agreed to take responsibility for the furtherance of lay education and fund raising. In recognition of an expanded role as statewide coordinator, the Tumor Study Committee changed its name in 1949 to the Cancer Coordinating Committee.[12] Dr. Allan J. Ryan was the first chairman. More than 25 years later, it remains an active force in cancer research and control, under the chairmanship of Dr. E. Tremain Bradley.

Statewide Cancer Program

In 1949, administrative collaboration was thus stabilized with a tripartite division of responsibility which included the Connecticut State Department of Health, the Connecticut State Medical Society's Association of Tumor Clinics, and the Connecticut Cancer Society (now named American Cancer Society—Connecticut Division). The latter society funded the position of Executive Secretary of the Association of Tumor Clinics, while the clinics themselves were financed through subsidy by the Connecticut Department of Health. The Health Department was to facilitate professional education through administration of the clinical exchange visit program. It is worth recalling that the clinical exchange program had been recommended by the New Haven Cancer Committee in 1935.

Evolution of the Registry

Staff Structure: In 1941, when the Registry first embarked upon statewide field work, its staff consisted of only 4 individuals. Since then the number has increased to a total of 33, and utilizes a consultant staff of specialists. The current data systems design is in progress under the direction of Dr. Norman Thetford of CCEU, with NCI support. The new data system is developing in concert with a parallel effort in the California Tumor Registry, and is expected to provide a model for national use. Most recently, a pathology review section, headed by Dr. Peter Goldblatt of the University of Connecticut Medical Center, has enhanced the Registry's research potential.

Changes in Emphasis: Over the years, the Registry has recorded expansion of its original files to approximately 300,000 records, with an active annual follow-up of 70,000 cases. Increasingly, staff of the Registry are called upon to participate in research with individual investigators and with NCI. Most recently, CCEU was established and accepted by NCI as a participating member of the Surveillance, Epidemiology and End Results Group (SEER) of the Biometry Branch (NCI) to conduct biometric and epidemiological analyses of the data. Other agencies, notably the Community Based Cancer Control Program, the Capitol Area Health Consortium, the Yale Comprehensive Cancer Center, American Cancer Society, other Health Department agencies, as well as the media, will place increasing operational demands upon the Registry.

National and International Involvement

Quality Control in Connecticut's Data Base: National or international use of cancer registry data required consistent accuracy and systematic management. From 1941, when Connecticut hospitals first provided cancer Registry data, until 1971, the comprehensive data base was maintained through voluntary physician and hospital response to the requests of the Health Department as authorized by the 1935 law. The legal requirement for registration became effective March 23, 1971, when the Administrative Regulations of the Department of Health were amended to read as follows:

> Section 19-36-1:
>
> Each general, special and chronic disease hospital licensed under chapter 333 of the general statutes shall report, on forms furnished by the State Department of Health, such information as the Department requires concerning diagnosis, stage of disease, medical history, laboratory data, tissue diagnosis, radiation, surgical or other methods of treatment, and annual lifetime follow-up on each cancer patient at such times as are necessary to maintain the Connecticut Tumor Registry.
>
> Section 19-36-2:
>
> Failure to comply with the requirements within six months after the end of the calendar year may be cause for suspension or revocation of the license of such hospital.[13]

This legal reaffirmation of the importance of the Registry function did not change policies or methods for reporting; rather, these have always depended upon a high degree of interest among physicians and other health professionals.

National Cancer Institute End Results Group: The first systematic integration of Connecticut cancer data with information from other parts of the country began in the 1950's. Connecticut data was both cited and challenged as being representative of all cancer data. Official national collaboration was begun in 1956 when 15 registries in other states were asked to submit data to the National Cancer Institute's End Results Group.[14] Connecticut's first data deck was submitted in 1962. Uniform national standards were required to assure compatibility and to protect confidentiality. At that time, emphasis changed from the analysis of survival to epidemiology and the study of incidence.[15] Collaboration with NCI also brought significant changes in the kinds of data which were collected and coded. With the assistance of the Connecticut State Medical Society Cancer Coordinating Committee a new Tumor Record Form was designed, and substantial changes were made in the kinds of research which might originate in the Registry. For example, code numbers were added for supportive treatment when no definitive therapy had been administered to the patient in the first course of treatment. While Connecticut had a code identifying radiation, chemotherapy, and surgery, the more extensive End Results code was adopted for subsequent treatments. In the same year, all treatments administered for a recurrence were coded. Extent of disease had not been coded prior to national collaboration; data on race of the patient was added in 1957.

The SEER Group: In 1973 the National Cancer Institute expanded the scope of the End Results Group and designated nine population-based cancer registries in the United States and supported by NCI as the Surveillance, Epidemiology and End Results Group, or SEER Group. In Connecticut this coincided with formation of CCEU and expansion of Registry activities as outlined. The SEER Group, with data for Connecticut, San Francisco, Iowa, Seattle, Detroit, New Mexico, Utah, Louisiana and Hawaii provide reliable cancer information for a sample of about 10% of U.S. residents. To further the completeness and value of SEER based information a series of operational and coding changes were undertaken. At the Connecticut Registry, a major recoding of data is in progress. Recently, the Registry added date and place of birth, certain variables containing information on family history, and also added a more detailed extent of disease and diagnostic procedures code system for colon, rectum and breast. The identification of specific lymph node and distant site involvement is being redesigned.

Collaborative Activities: In addition to increasing its potential for in-house research, the Registry is more and more involved in collaborative epidemiological and related biomedical research. In the last year alone, the Registry has responded to 68 investigators in other states, to 77 investigators in Connecticut, and to 12 from abroad. International studies involving breast, colon, and rectum are currently being planned.

New Directions

The Connecticut Tumor Registry will continue to change in response to new challenges and queries. With an enhanced capacity for linkage with other departments and data bases, the Registry can be expected to assist in the identification of special populations and groups throughout Connecticut who are suspected to be at higher risk. Targeting areas for intensified screening programs will improve the capacity for early detection and therefore earlier treatment. Educational efforts can be more accurately aimed and implemented by using the Registry's information about the activities of individuals and agencies involved in cancer. While it is not a formal function of the Registry to coordinate cancer activities in Connecticut, the Registry is in a unique position to assist those with this responsibility. As the perspective broadens to a more international focus, and as the capacity for international and comparative research increases, the need for new Registries in developing nations will increase. An understanding of the history of the Connecticut Tumor Registry can help to guide the development of new Registries both in the United States and abroad.

Members of the New Haven Cancer Committee, 1935

Ray J. Reigeluth, Chairman, President, C. W. Blakeslee Co.
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William C. Butterfield, M.D.

For those of you who feel in a rut and don't mind poisonous snakes on the hospital grounds, bats in the hospital itself, your nurses being bitten by scorpions and patients with alligator bites, let me suggest an antidote for your problem—a trip to the eastern coast of Nicaragua. It's guaranteed to instill a little adventure into your otherwise routine life. This is one of the many areas around the world desperately in need of volunteer physicians. Lists of such places can be obtained from several sources—the author used AmDoc, a voluntary non-profit organization situated in San Diego, California. AmDoc acts as a clearing house for hospitals and clinics in Asia, Africa, Latin America and the U.S.A. who need volunteers on a short or long term arrangement to meet their medical needs. There are travel expenses and a salary for those volunteering for a year or more, while those going for a few weeks or months usually have to provide for their own travel expenses. You tell them where you would like to go and AmDoc will match you with a place that can use your talents.

The author, his wife and six year old boy recently spent a four week's working vacation along the eastern coast of Nicaragua. The eastern coast is the "Siberia" of Nicaragua, an area outside the Spanish mainstream of the country and largely neglected by the Nicaraguan government. It is covered by tropical rain forests, pine savannahs and coastal lowlands. Lumbering and mining were very active in the area formerly but the foreign lumber companies raped the land and didn't replant what they took so that much of the naturally regrown woods today are filled with trees too young for lumbering purposes. The land is populated by people of Negro, Spanish, Indian and mixed bloods. The Miskito Indians who are indigenous to this area of Central America live in scattered villages along the rivers and the coast of the Caribbean. Although they are past the loin-cloth stage, they still largely depend on hunting and fishing to supply their food. They speak their own language. Some know Spanish also and a fair number speak English since the English pirate ships during the seventeenth century used the coastline as a base for operations, and the east coast was later under British rule in the early nineteenth century.

Life is hard for the Indians and only the hardiest reach adulthood. Infant and child mortality rates are quite high and marasmus and kwashiorkor are still being seen and treated. The Moravians who run the two hospitals serving this population send nurse and doctor teams into the villages to vaccinate the children, give them vitamins and periodically deworm them. Deworming is an endless job since sanitation is primitive, people go barefoot, and horses, cows, pigs, dogs and chickens run freely over the land (no fences) defecating whenever the urge arises. The animals do keep the grass short however and nobody has to mow in front of their homes. The homes, by the way, are small wooden shacks, some with thatched roofs, which sit up on stilts to keep out the dampness, snakes and pigs. During these village visits the nurses play recordings of Miskito songs, interspersed with sanitation lectures. The Indian children have a good time dancing their native dances to the music. Minor illnesses are treated on these visits and more serious illnesses are referred back to the hospital. The nurses also run a program on family planning in the villages which includes advice on contraception and the insertion of I.U.Ds. It hasn't been too successful since the men feel their virility is impugned if they don't produce many children. During lunch break, the natives provide fresh coconut milk for the doctors and nurses. It's fascinating to watch an Indian woman dehusk a coconut and open up the top of the nut so that the milk can be drunk. It's all done with a few swift strokes of a large and deadly looking machete.

The doctors in the hospitals are a combination of long term volunteers, Nicaraguan full timers, young doctors who have just graduated and are serving their six month term of social service to the government, and a passing parade of short-term volunteers ranging from general practitioners to surgeons to surgical technicians to physician's associates. As a surgeon, I found myself doing a range of operations that I wouldn't ordinarily do back in the more specialty-minded States. The variety was striking and included a radical hysterectomy for carcinoma of the cervix, open pinning of a fracture of the lateral condyle of the humerus, and a pyloro-myotomy for pyloric stenosis in an infant. I even did my first vasectomy on a native minister who, I guess, was attempting to set an exam-

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DR. WILLIAM C. BUTTERFIELD, Chairman, Division of Surgery, St. Mary's Hospital, Waterbury; Associate Clinical Professor of Surgery, University of Connecticut, Farmington.

ple for his flock. Operating room conditions were primitive by our standards but somehow people seemed to end up doing an adequate job. One of the O.Rs had worked out a novel way of saving sutures and therefore money on skin closures. They bought nylon fishing line, sterilized it and used it as a running suture. It worked beautifully. It was easy to handle, non-reactive and only cost a penny per patient.

One of the more interesting patients was an Indian who lived along the Caribbean coast and who was a fisherman. He did most of his fishing in the lagoons where he would lay his nets. Unfortunately, an alligator got entangled in one of them and before he could get him out of it, the alligator bit him in the leg. The wounds which consisted of two rows of excavated teeth marks along the leg and thigh became infected and were treated by debridement and antibiotics. I'm still trying to figure out how I can casually mention this case to my colleagues back here in the course of our medical shop-talk. It should be good for some sort of one-upmanship.

Since I was only responsible for patient care and didn't have to worry about insurance forms, serving on committees and the like, there was plenty of time for outside activities. My family and I cooled off from the tropical heat by swimming in a nearby river which was partially dammed. Here we swam with the naked Miskito kids while their mothers washed their cloths on the rocks along the river's edge. Occasionally one of the women would join us for a swim fully dressed. One of the hospitals was next to the Caribbean sea and we continued our swimming activities there. Unlike our friends back in the states, we were not troubled by overcrowded beaches since, other than ourselves, the only ones on the beach were a sporadic small group of natives or an occasional cow who wandered by. We also went fishing in the river Coco, a large meandering river bordered by an overhanging tropical forest. There, miles from the ocean, in a large dug-out canoe with some Miskito Indians, one of the doctors hooked onto a fresh water shark about 2½ feet long. It was a real shark. For some unexplained reason, Nicaragua seems to be the only country in the world with fresh water sharks. Usually they've been in the southern part of the country in Lake Nicaragua, however, and not in the river Coco which is in the north.

Back home again, we think of this summer trip and almost feel as if we had stepped back in time for a hundred years. From a professional standpoint, it was tremendously satisfying to help people who really needed you and who were extremely grateful for your help. Even my wife, who is sort of citified and doesn't ordinarily like the rugged life, has begun laying plans for next year's "trip."

What Professionals Should Know About "Going Bare"

What are the risks of "going bare"—practicing without liability insurance? Are these risks offset by savings in premiums? W. Fred Mangan, president of the national professional management firm of Black & Skaggs, Battle Creek, Mich., says these days the question that professional clients most frequently ask is: "Should I go bare?"

In Mangan's opinion, practicing without malpractice insurance is "only for the few tough-minded individuals who can live with the possibility of losing everything they've acquired . . . plus a chunk of their future earnings." Mangan warns:

—That if an MD drops insurance and is successfully sued, he'll have to pay judgments and defense costs himself and that may wipe out his holdings.

—That if he wants to put assets out of reach of the courts, he'll have to pauperize himself—"not a very appealing idea for someone who has worked hard all his life."

—That giving away assets triggers gift tax liability, which could be considerable.

—That there's no guarantee that the wife or children to whom he "gives" assets will stay around to share them. "The 1974 divorce rate was 43% and that beats the malpractice rate for most high-risk specialties."

—That if a physician or professional loses a case, future earnings can be attached, with creditors posted in his office, keeping tabs on his bank accounts, and siphoning off payments from patients and insurance companies.

A doctor could declare bankruptcy but that isn't easy when he brings in a handsome income.—*Malpractice Lifeline, August, 1976.*

Madness, Committal and Society: Psychiatry in the Service of the Law?

Michael Alfred Peszke, M.D.

This work is respectfully dedicated to the People of Connecticut on their Bicentennial. The great accomplishments of the "Constitution State" give promise and hope for a future of equity in law and mercy in its administration.

The topic of this paper has to do with a discussion of the procedures, principles, and problems of ethics in regard to the commitment for care, treatment, or observation of those that society considers to be mad. To clarify this further, it needs to be emphasized that the commitment process under scrutiny has to do with civil commitment; i.e., the commitment of those individuals who have *not* committed acts which are considered criminal or anti-social.

It is the definition and the concept of 'madness' that raises the most perplexing problem. For many millennia all Western derived societies have accepted that there are certain individuals who, for a variety of reasons, appear to be deviant and who do not appear to conform to the patterns of behavior that society considers as falling within the expected range of normalcy. From a behavioristic point of view, which is certainly the hallmark of the legal system, any behavior that is outside of normal is deviant. Thus, many willingly, or due to lack of clarity, obfuscate the difference between madness and badness. Yet it should be emphasized that the legal system over the centuries has recognized that a criminal act perpetrated by a person who is mad does not have that degree of malevolence or evil intent (lacks *mens rea)* which would make the perpetrator guilty of evil, and thus the accused may be exculpated and found not guilty by reason of his insanity or madness.[1]

The mad have always been perceived as being unpredictable, irrational, impassioned, at times showing great strength, and inevitably perceived and feared as dangerous. But it is important to remember that there has been a long recognized presumption that great stress, usually of a psychological nature, may precipitate a condition of madness by making the mind snap, as in the case of Ophelia or Lady Macbeth. Thus, historically, the mad may be feared, sequestered, even ridiculed, but they were also pitied and considered to be victims of outside forces. These forces, at times, have been viewed as demonic (possessed by the devil), biological (poor genes), psychological (weak ego), spiritual (lack of faith leading to despair). We are in an era of preoccupation with sociological and deterministic philosophy. Thus, deviance is explained by sociological ideologies and they will inevitably differ in capitalist versus socialist countries.

The State has always accepted, in principle, its obligation to take care of those who are unable to take care of themselves or who lack a family to assume that obligation. This *parens patriae* philosophy was a result of the Christian tradition in Europe compounded by the feudal system that developed. It has permeated our value systems that it is a basic ethical principle, though obviously a double edged sword; the most obvious problem being a coercive paternalism. The quality and extent of this obligation has varied tremendously and much has been made of the fact that taking care of the estate of the mentally incompetent was, at times, a lucrative business for the King or Feudal Lord. The fact that a system is, at times, abused and yet continues would seem to indicate that social conscience fundamentally accepts the merit and the need for such assumption of responsibility for those who are unable to fend for themselves. If fiduciary trust is, at times, abused, which it is now as in the past, it does not in itself impeach the principle.

The last 150 years reveal a revolutionary increase of scientific knowledge as well as scientific sophistication which now serve as the foundation of medicine. Psychiatry has not quite kept pace with the rest of the knowledge explosion of medicine, yet a number of

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DR. MICHAEL A. PESZKE, Associate Professor of Psychiatry at the University of Conn. School of Medicine and Lecturer in Law at the University of Conn. School of Law. This paper is based on Professor Peszke's presentation at the University of Conn. Health Center as part of the Program, "The Public and Its Problems—Forum on Human Values and Health Care." The program on October 15, 1975, was "Madness, Committal and Society: Psychiatry in the Service of the Law?" The Forums are supported by a grant (CHC-P-7514-G11) awarded by the Connecticut Humanities Council under the auspices of the National Endowment for the Humanities to Stuart F. Spicker, Ph.D., Forum moderator and director of Humanistic Studies in Medicine in the School of Medicine. The October Forum was co-sponsored by the Connecticut Bar Association, Section of Human Rights and Responsibility.

outstanding discoveries have occurred and the significance of these is generally taken for granted and no longer remembered. Significant was the elucidation of the part played by syphilis in the causation of certain forms of mental illness popularly called "general paralysis of the insane" and that of advanced hypothyroidism (myxedema) which presented as mental impairment but whose actual cause was endocrinological. The advances in nosology, however much sneered at by many mental health professionals, have also led directly to advances in treatment. (There is a very unfortunate tendency to sneer at diagnostic criteria which reminds one of the aphorism of Oscar Wilde in regard to society: "Only those who do not belong to society sneer at it.") Many mental health workers who only know how to do counselling and therapy, understandably have no great motivation or interest in differentiating a manic condition (which can be treated with Lithium), from a psychotic depression (which may be treated with anti-depressants), from acute schizophrenic reaction (which responds to phenothiazines).

With the growing realization that treatment of some forms of mental illness or impairment was possible, the philosophy of treatment began to predominate as a reason for involuntary hospitalization.

Before we look at the new "therapeutic" statutes of the 19th Century, it might be worthwhile to briefly recapitulate the past: The American colonists transplanted English customs, language, and common law; but the small rural communities of the New World, though progressive in many aspects, had no professional classes or universities. They were overwhelmingly rural. The colonists took with them the mores of their class (the yeomanry of England) imbued with a strong religious ideology. The very first laws of the State of Connecticut, compiled in 1673, contain nothing relevant to the mentally ill. The nearest that could, by any stretch of the imagination, be related to the mentally ill has to do with a strong law against idleness.[2] However, by 1702 we find that, "ideots and distracted persons" have to be provided for by selectmen or overseers, that the towns have to pay for their upkeep, that Justices of the Peace within the County to which they belong, dispose of their estates to their best advantage. The actual wording is revealing:

> "Be it enacted and declared by the Governor, Council and Representatives, in General Court assembled, and by the Authorized of the same, that when and so often as it shall happen, any person to be naturally wanting of understandings, so as to be uncapable to provide for him, or her self; or by the Providence of God, shall fall into Distraction and become Non Compos Mentis, and no Relations appear, that will undertake the care of providing for them; or that stand in so near a degree, as that by Law they may be compelled thereto; in every such case the Selectmen or overseers of the poor of the Town, or Peculiar, where such person was born, or is by Law an Inhabitant, be, and hereby are empowered and required, to take effectual care, and make necessary Provision, for the relief, support and safety, of such impotent or distracted persons . . . . ."[3]

Thus, the statutes, if anything, tended to reflect the Elizabethan Poor Laws of England.

In 1796, we see "An Act for Relieving and Ordering of Idiots, Impotent, Distracted and Idle Persons." Much of the provisions of these statutes has to do with attempting to meet a dual responsibility: (1) the physical care of the distracted *non compos mentis* in a humane fashion; (2) making sure that as much as possible the family and not the community is stuck with the bill.[4]

In 1796, there is a specific section which refers to lunatics who are dangerous, "And the said Civil Authority and Selectmen may, if by them found necessary, order such insane Person, or Persons, to be committed to the Goal in that County where he or she dwells, there to be closely and securely kept during the continuance of such distraction or insanity, or until released as is hereafter provided."

However, in England during that period of time, there were two significant Acts (1714 and 1748).[5] This progressive English legislation required medical authority for admission to an asylum; initially only for the wealthy, but with the second Act, even for the commitment of the indigent.

The acme of the late eighteenth century's concept of political sophistication and natural law was, undoubtedly, the United States Constitution of 1781; understandably it did not in any way address itself to those issues which are currently so acrimonious. It is an interesting paradox that this great new social contract directly affected the first liberal constitution of Europe—that of Poland in 1791—which set up various administrative departments including the first Ministry of Education, and a Board for the protection of national health. All cases of mental illness were to be reported to the Board, which appointed special investigation teams. These teams determined whether potential patients needed to be certified to asylums. Such tribunals were also empowered to hear witnesses and to follow the progress of the patient in the hospital; the criterion for such admission and stay being the patient's welfare and his treatability![6]

During the 19th Century, under influence of the medical model, treatment became the hallmark for involuntary hospitalization. This is reflected in the

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statutes. By 1875, approximately ten years after the founding of the Connecticut Hospital for the Insane in Middletown, the following were the highlights of the statutes:

> "Any insane person may be put in any suitable place of detention on the presentation of a certificate, made within 30 days, signed by some reputable physician, that he has made a personal examination of such person, within one week prior to the date thereof, and that such person is insane, which certificate shall be sworn to before some officer authorized to administer oaths in the State where it is given, who shall certify to the genuineness of the signature thereto, and respectability of the signer; and any such person may be removed by the person placing him in such place of detention."[7]

However, there was another way of being admitted to an asylum. A written complaint could be made to any Judge of the Superior Court that a person named is insane and as a result of that the Judge,

> "Shall immediately appoint a committee consisting of a physician and two other persons, one of whom shall be an Attorney-At-Law, Judge, or Justice of the Peace, who, after such person has been notified according to the order of such Judge of Superior Court, shall inquire into such complaint and report to him the facts of the case and their opinions thereon; and if, in their opinion such person should be confined, such Judge shall issue an order therefor."

By 1902, in the statutes, we find that 'asylum' is defined as "any public or private hospital, retreat, institution, house or place in which any insane person is received or detained as a patient for compensation." An insane person "shall include every idiot, non compos, lunatic, insane and distracted person." At this point the jurisdiction of the commitment of an insane person to an asylum is vested in a Court of Probate. By the late 1950's, any patient, "in need of immediate care in a hospital for mental illness," can be so certified and involuntarily admitted for a thirty day period. The definition of 'mentally ill person' "includes each person afflicted by mental disease to such extent that he requires care and treatment for his own welfare or the welfare of others or of the community, and specifically excludes a person whose sole psychiatric disorder is drug dependence."[8]

This therapeutic optimism of the 19th Century led to the growth of medical asylums. But in the United States there were also unique sociological factors. The impetus of the technological and industrial revolution in the Western world, and the flooding of immigrants to the North American Continent, led to the asylums being stressed to a point where they were no longer able to meet their mandate. They were no longer therapeutic asylums, but warehouses.

The phenomenon of the snake pit led to many social concerns, some of them expressed by the writings of Clifford Beers and Dorothea Dix.[9] Some of the practices of involuntary hospitalization, at times on the mere say-so of a physician, and in certain instances merely on the wish of a male member of the family, led to the famous case of Mrs. Packard and the ensuing provision of jury trial to determine need for involuntary hospitalization.[10]

While in most instances these concerns were raised and new practices implemented to protect the civil liberties of citizens, it is undoubtedly true, in retrospect, that they were also accepted by the legislatures as ways of saving money. As recently as 1948, in a survey of State facilities in the forty-eight states, it was shown that voluntary admissions were discouraged or unknown in many State hospitals.[11] The jury trial in Illinois, initially thought of as a way of protecting the civil liberties, was also seen very much as a way for citizens to inhibit people from having a free meal ticket at the community's expense. This point needs to be emphasized, because many civil libertarian concerns are reflected in legislative bills that are prompted more by fiscal miserliness. The new Connecticut Public Act concerning decriminalizing alcoholism is undoubtedly a reflection of the hope to get alcoholics out of the courts and jails—where they are a liability on the taxpayer—to medical facilities—where at least a significant cost factor will be assessed to medical (private and federal) insurance programs.[12] This is another example of society defining the parameters of illness and by a legislative stroke making a drunk—sick; rather than a public nuisance with a weak willed character and a filthy habit!

It would be difficult to recapitulate all the problems and all the criticisms which affect and confront involuntary hospitalization. One's biases and attitudes certainly affect an objective and dispassionate assessment of all the anti-psychiatry and anti-involuntary hospitalization viewpoints.

Some consider the concept 'mental illness' to be a construct or an irrational belief akin to that which pervaded Western thought in its belief in witchcraft; the corollary of this being that once belief in witches stopped then witchcraft and witches disappeared and so will mental illness and the mentally ill.[13] Many constitutional law purists argue that to hospitalize involuntarily is inimical to the widest interpretation and philosophy of the United States Constitution; that if it needs to be done, it should be done with all due process and also for very specific reasons. Since the right to treatment as such is not in the Constitution, then only the traditional *parens patriae* and police power of the State allow for such a practice. This becomes refined as meaning that only those who are unable to care for themselves or who present a danger to society may be "incarcerated." There is concern that involuntary hospitalization may be used for political ends which would be exploited by a government to buttress its authoritarian and potentially totalitarian control. At one time this concern emanated from the conservative right wing and was well expressed by a letter received by Doctor C. H. H. Branch: "Caesar had his arena. Hitler his gas ovens, Russia her slave labor camps, and the Kennedy Administrator its mental health institutions."[14] Recently the concern in the United States is from the left and liberal side, fueled by the continued documentation of the exploitation in the Soviet Union of psychiatric facilities for control of political dissidents. The recent Watergate scandal followed by evidence of numerous abuses in the executive branch of the United States government has not reassured the public. Some groups are concerned about the basic unfairness of hospitalizing individuals against their will in facilities which do not provide dignified or adequate psychiatric care. These groups have pushed for court action to provide dignified and appropriate treatment to patients as the last recourse since legislatures have continued to ignore the magnitude of the problem. These advocates have urged the principle of "right to treatment" and have argued that it is constitutionally guaranteed.[15]

In 1971, in the State of Connecticut, there was a retrenchment and an emphasis on the traditional (18th Century) reasons for involuntary confinement. The effectiveness of the emergency certificate was shortened to fifteen days (had been thirty) and the issue of dangerousness was introduced at the emergency commitment phase, but not for probate commitment. The new language reads as follows:

> "I am of the opinion that the above-named person is in immediate need of care and treatment in a hospital for mental illness, BECAUSE HIS MENTAL CONDITION PRESENTS A DANGER TO HIMSELF OR OTHERS." The upper case words are a new addition.

Does it make sense to commit the mentally ill if they are, in fact, dangerous but not to commit them if it is only for their own welfare? Should the issue of dangerousness be a medical concern?[16]

Furthermore, psychiatrists are poor predictors of danger. For an excellent review of this criterion see S. A. Shah's article.[17] The problem is even further compounded by the fact that in Connecticut any licensed physician, not just the psychiatrist, is permitted to certify patients for involuntary hospitalization and to do so on the basis of "dangerousness."

From a pedagogical point of view, the current situation is particularly difficult. While the laws and juridical decisions pertaining to such issues as malpractice or informed consent are certainly far from clear, and vary considerably from state to state, one can at least have recourse to practicing and teaching students how to deliver the very best quality care that is consensually agreed upon. In those areas which begin to depart from established practice, such as experimentation with human beings, there is time to consider and weigh the benefits and risks. Institutional Review Boards which evaluate experiments with human beings, evaluate the procedures, advise on methodology, and to some extent, provide a judicious pause for reflection and for second and enlightened opinion. When it comes to the issue of commitment, there is inevitably no time whatsoever for dispassionate analysis or for seeking more expert opinion. Few books in psychiatry deal with this issue. Court decisions which affect our actions are in many ways precluding us from following our clinical judgment and may even force us to act contrary to our medical ethics. The most notorious example being the decision in the Tarasoff *v.* Regents of the University of California where the California State Supreme Court ruled that a psychiatrist may have a duty to breach patient confidence and warn other (unknown) parties of potential danger![18]

Legal decisions are made on the basis of judicial rulings in disputed cases. Unfortunately, our common law (precedent law) is particularly unwieldy when it comes to social science issues. Disputes in this area are the result of lack of legislative clarity or murkiness of the problem. Political issues, ethical values, social biases, enter into judicial decision making. Difficult cases ultimately make for bad law. But good or bad it becomes the only kind of standard given the abrogation of responsibility in this regard by the majority of the democratically elected State Legislatures.

One, therefore, looks at all the court decisions which have affected psychiatric practice, particularly the practice of involuntary commitment, in order to see what is the trend and what is the thinking of the legal process.

Most of the crucial decisions regarding involuntary treatment have been made in Federal Courts where plaintiffs have taken their complaint on the basis of alleged infringement of civil rights which are guaranteed by the United States Constitution or lack of treatment in most institutions. The decisions handed down appear to be paradoxical even though attorneys assure us that the paradox is only due to lack of understanding of the legal system and its process. However, be it as it may, the physician views commitment statutes in all states essentially in the same manner and does not differentiate or is aware of the nuances or vagueness of legal language or clarity of the respective statutes. Therefore, to a physician the fact that in two different Federal Circuits, Courts have made different rulings on what to a medical man are identical issues is paradoxical. (I still have to be convinced that the medical assessment of the situation is not the correct one). In our own State of Connecticut, a Federal Court ruled in the Logan-Arafeh decision that the state statutes did not infringe the civil rights of the plaintiffs.[19] But to put it in the vernacular, "We ain't heard the end of this yet." There is a concerted effort among many Civil Liberties Union attorneys to find a suitable case in Connecticut which will then be brought for an appeal to the State Supreme Court for final adjudication of the State's statutes. Many attorneys consider Connecticut Statutes to be contradictory, unwieldy, depriving the patient of due process and thus unconstitutional. The equity with which hundreds, if not thousands, of individuals are committed, will not be the issue. It will be decided by a non-medical court on an atypical difficult case where there is likelihood of gross incompetence. This to a medical man is like deciding the appropriateness of hysterectomies on the strength of one single badly diagnosed, poorly managed and unnecessary operative intervention.

On the other hand, in the State of Wisconsin, a Federal Court made a different judicial ruling which is now being viewed as a progressive decision and may very well be a harbinger of the future.[20]

In the Lessard case, Judge Sprecher ruled that the Wisconsin State Statutes were an infringement of civil rights; but it is in his opinion that the controversy between civil libertarian and many in the medical profession is highlighted. Judge Sprecher argued that the patient has a right against self-incrimination. He writes: "The prospect of a seriously ill individual being prevented from obtaining needed treatment in a situation in which treatment is possible and will actually be given, on the basis of counsel's advice to refuse to make any statements to a psychiatrist appears ludicrous." In spite of that, however, Judge Sprecher found Justice Douglas's opinion (from the precedent-making Gault Decision) as persuasive and ordered that Wisconsin may not, "consistent with basic concepts of due process, commit individuals on the basis of their statements to psychiatrists in the absence of showing that the statements were made with knowledge that the individual was not obliged to speak." He continued: "Basic fairness requires, though, that they (patients) be given notice of the fact that their statements may indeed tend to incriminate them in the eyes of the psychiatrist and the trier of fact in a civil commitment proceeding." In fact, Judge Sprecher showed his bias. Mental illness as well as the need to protect the welfare of a patient are seen as incriminating. With such different resolutions to what, at least in psychiatric eyes, appear to be identical problems, everyone waited for the Supreme Court of the Land to rule on the issues.

When the Supreme Court of the United States eventually decided to take under jurisdiction a Federal Rights Case, Donaldson vs. O'Connor, many hoped that some of the fundamental issues would be adjudicated.

To understand the problems involved, a brief vignette is imperative. Mr. Kenneth Donaldson was civilly commited to a Florida State psychiatric institution in 1957. In 1971, he brought a civil action for damages in a Federal Court under a Federal statute which states: "Every person who, under color of any statute, ordinance, regulation, custom, or usage of any state or territory subjects, or causes to be subjected, any citizen of the United States or other person within the jurisdiction thereof to the deprivation of any rights, privileges, or immunity secured by the Constitution and laws, shall be liable to the party injured in an action at law, suit in equity, or other proceeding for redress" 42U.S.C. Article 1983. Mr. Donaldson, during his long and extended stay in the Institution, had been denied discharge by the hospital psychiatrists and on a number of occasions his discharge applications had been denied by local Florida State Courts. Claiming to be a Christian Scientist, he had on numerous occasions, refused any kind of medication or other biological treatments. Mr. Donaldson charged the hospital psychiatrists that they had maliciously neglected him, had not treated him, and that offers of his friends to take care of him on the outside had been spurned and ignored. Furthermore, Mr. Donaldson argued that he had been locked up even though there was no evidence of any dangerousness. The Fifth Federal Circuit Court ruled for Mr. Donaldson and assessed personal punitive damages against a number of staff members. The Circuit Court argued further that a committed patient had a right to treatment as a trade off for the loss of his liberty this being an invocation of what has developed as the *quid pro quo* theory of commitment. Essentially, the principle underlying this being that the patient gets treatment for his loss of liberty but that treatment is guaranteed under our legal system. This decision was appealed by the state hospital psychiatrists to the Supreme Court and the American Psychiatric Association requested its presence as a friend of the Court and argued that the right to treatment be upheld but that the punitive damages be set aside. The official body of psychiatry was thus going on record to force the states to provide dignified and adequate treatment of the inmates of the state institutions. Unfortunately, at least from a psychiatric point of view, that decision is disappointing for a number of reasons. The unanimous Court decided that, "State hospital's involuntary custodial confinement, without treatment, of a mental patient who was not dangerous to himself or others, violates a patient's constitutional right to liberty."[21]

The predictability or definition of dangerousness is not discussed in the Supreme Court decision, nor is the quality or extent of treatment that is appropriate, let alone the definition of forms of mental illness which warrant involuntary confinement. The decision appears to uphold the Constitutional right of a State to confine, for involuntary treatment or custody, those citizens who may not necessarily be dangerous as long as they are being treated. It can also be interpreted as approving the constitutionality of psychiatric hospitalization of those who are dangerous but not necessarily treatable or currently being treated. Many who looked to the Supreme Court for a general statement upholding the "right to treatment" or the right to freedom or due process, are disappointed and interpret the decision as having little general weight, merely a specific in the Donaldson Case. The Supreme Court decision raises other issues which are potentially worrisome. Justice Burger, in his discussion, quoted a number of scholarly studies. However, he made no reference to a single psychiatric work. He refers to eight studies in the area of mental health, none of which were published in psychiatric or scientific periodicals. He quotes Jay Katz from a legal journal, "One of the few areas of agreement among behavioral specialists is that uncooperative patients cannot benefit from therapy and that the first step in effective treatment is acknowledgment by the patient that he is suffering from an abnormal condition."[22] The fact of that matter is that most psychotic and uncooperative patients usually do respond quite well to the prescription of anti-psychotic medications, and that their cooperation is really not particularly necessary in such early stages of treatment. Compliance with treatment is conditioned on perceived need for treatment. This quote from Professor Katz (in my judgment) is taken out of context since Katz's writing had to do with a much more philosophical issue. Certainly the issue of compliance to a therapeutic regimen is an important issue in preventing further exacerbations of psychotic illness. Judge Burger also quotes a legal journal written by three authors, none of whom is a psychiatrist, and finds their paper to be persuasive on the point that paranoid schizophrenia is notoriously not susceptible to treatment.

Decisions about medical and psychiatric practice are being made in various judicial or legislative bodies on the basis of insufficient or inadequate data. These decisions have specific impact on the practice of medicine and psychiatry and also on the welfare of the community. We have already seen how public policy, morality, and science have become intertwined in other areas of judicial decision making. The emergency commitment policy issues have public policy and legal impact, ethical and psychiatric implications, and are founded on Constitutional principles. For a psychiatrist it is puzzling how an 18th Century document is still employed to decide 20th Century issues in clinical practice and even public policy. Furthermore, there is a lack of clarity in the philosophy of the judicial system. Does it reflect public morality? Does it reflect what is the "best" in human and ethical values? Is it a social conscience to nudge the rest towards Utopian goals?

It is this lack of clarity of philosophy and the different biases which bode trouble for psychiatry which has gone beyond the "ideals" and "non compos mentis" stage of practice.

But the medical specialty and its psychiatric fraternity, in particular, cannot under any circumstance escape a significant indictment. During the study of psychiatrists' attitudes conducted by Wintrob and Peszke, of which the first part has already been reported, it was found that many academically and intellectually oriented psychiatrists refused to become involved in this issue.[23] While many may have genuinely felt unfamiliar or uncomfortable with the problem of civil commitment, and some may have misunderstood the implications of the questionnaire, it also became quite clear that this was not a cause which concerned them.

There are, currently, few academic areas to which practicing psychiatrists can turn for help in understanding the scope of the legal, ethical, or social responsibility in the everyday practice of their profession. There is, currently, no organized body which can act as a resource center to the organized psychiatric professional groups or to play an advisory role to the State Legislature or the Bar Association in relation to many of these issues.

Much of the information regarding scientific and professional data is obtained through lobbying or through personal contacts, at times deriving from social relationships. Often tendentious opinion is sought and obtained. Lobbying, an accepted political process in general, is out of place in this area. It reflects poorly on the process itself, does little for the professional groups and does nothing to serve the needs of the community.

Furthermore, the medical profession has not taken a professional stand or made known to the public where it stands on the issues of commitment or what its expertise is capable of diagnosing, preventing and treating. Furthermore, it has not taken a position on the ethical parameters within which it is able to practice!

In Germany, during the Nazi period, many physicians who cooperated with and followed the practices of the Nationalist Socialist party, claimed as justification for their actions that they were only following that which was considered and declared by the Courts to be legal.

In the United States we are somewhat contemptuous and critical of the Soviet Union, in which psychiatric expertise is abused to protect Socialist society from the "dangerous" individual. The United States Supreme Court decision does raise the issue that the dangerous individual may, indeed, be committed or incarcerated even if he is not treatable. A literal reading might even indicate that the "dangerous" person may not, in fact, even have to be diagnosed as mentally ill. This raises a serious concern that psychiatric facilities and psychiatrists may become as much an arm of society in this country as they are alleged to be in the Soviet Union.

It is clear that the problems confronted by our society are too complex for simple answers, and too serious to be left to the best intentions of Judges acting on their preconceived notions of psychology or science. The motto of Connecticut is *Qui Transtulit Sustinet.* It would be appropriate if some of these issues were studied by special Commissions of informed citizenry, the State bar, Judges, and also physicians, just as these issues are studied in Britain by Royal Commissions. At this point, the basic question of what public policy and good is served by what approach to this long standing and vexing problem is still not clear. The legal system is still unclear as to which it represents: The medical profession mimics the ostrich.

There is a madness in our commitment procedure. There is a commitment to madness in the way our society, through fifty different state statutes, different court rulings, guides the steps of the physician and protects the health and the civil liberties of its citizens.

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Educating for Change: The Next 25 Years

Robert U. Massey, M.D.

"Fully 80% of illness is functional and can be effectively treated by any talented healer who displays warmth, interest, and compassion regardless of whether he has finished grammar school. Another 10% of illness is wholly incurable. This leaves only 10% in which scientific medicine—at considerable cost—has any value at all."[1]

Those of us disciplined in the scientific method would hardly be prepared to accept that statement without a challenge. Its language is imprecise and it lacks supporting data. But most of us who have had experience in clinical medicine recognize that it might be partly true, that it makes us somehow uneasy, and that it hints at some unconsidered problems which we in medicine have yet to face.

I have a notion that the major theme of the next 25 years in our profession is implicit in those lines. The 19th Century saw the rise of scientific medicine, nursing, and public health. It was the century of the surgeon, and its last quarter belonged to microbiology. By 1900, in most cities of Western Europe or on the American Eastern seaboard, you or I probably would have survived acute appendicitis, surgically cured.

Each of the first three quarters of the 20th Century have had their dominant themes. The first quarter produced the great clinical teachers and diagnosticians in medicine, and in America saw the reform of medical education. Medical therapy, except for pain relief, had been largely ineffective; the intellectual appeal of medicine was in diagnosis which by then rested on a firm base of anatomy, microbiology, and pathology. The second quarter belonged to therapeutics; it began with the discovery of insulin as the specific therapy for diabetes in 1922, and of liver for pernicious anemia in 1925. Sulfonamides, antibiotics, cortisone, ACTH, and psychoactive drugs all changed the nature of medicine so that physicians could now sometimes cure, as well as care for, their patients and could care for them more effectively. The third quarter saw biology take its place as an accepted member of the hard sciences. The development of molecular biology and the discovery of the nature of the genetic code provided biologists with the evidence they needed to support their thesis that the processes of life are reducible to physics. During this same period, we have seen the development of elaborate and costly technologies. Medicine and engineering discovered that they had much to offer each other, and that they could profit from one another in more ways than one! Curiously, neither development has had much impact on health, or rather upon the indices of health. There has been little increase in life expectancy for fifty years, and what has occurred cannot readily be attributed to the advances in medical knowledge or medical technology. In fact, some health problems have gotten worse—malnutrition, lung cancer, accidental death and disability, drug addiction, venereal disease—to mention a few which come readily to mind. It even looks, at times, as though we could be outwitted.

Some time ago, I was asked to speculate on what the practice of medicine would be like in 1984. That ominous sounding year is drawing near, and those of us who recall the terror we felt in reading Orwell's prophetic novel 25 years ago will be much relieved to awaken to the morning of January 1, 1985, in a world where the values of western civilization still survive. In that speculation, I found I could not consider 1984 or the future beyond without dealing with the three barriers which stand in the way of a decent future: over-population, over-organization, and the loss of nerve.

For it must now be clear to all of us that unless we believe that we can stop the exponential growth of world population, and are determined to do it, seeking solutions to our other problems of energy and food supply become futile exercises, useful to pass the time while the warp and woof of western civilization unravels before our eyes faster than we can reweave it.

Over-organization was the outward and visible evil in both George Orwell's *1984,* and in Aldous Huxley's *Brave New World* written 20 years earlier. The popular willingness to sacrifice freedom for security, and the application by those in power of the new skills learned from the behavioral scientists and the communication technologists, make possible an even greater degree of control by our masters than that envisaged by Orwell and Huxley. The dictatorships of the thirties were immature and clumsy attempts to control nations and kindred populations. Nothing so crude and unappealing as Hitler's National Socialism is likely to occur in our future unless, of course, we should face imminent social and economic collapse. More subtle, more humane means for imposing power incrementally are readily at hand, and those whose lives are dedicated to the pursuit of power have never been lacking. In fact, we do not always distinguish the instinct for power from the virtue of leadership.

Finally, there seems to be in the West a loss of nerve. Our world of the latter 20th Century lies somewhere in

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This paper was based on the commencement address to the House Staff graduating at Hartford Hospital, June 19, 1975.

the 4th millenium of a culture which began in the Eastern Mediterranean basin and came to us as the *collegium trilingue,*[2] the triangular culture of the Greek, Latin and Jewish traditions—a culture that is essentially Hellenistic, and therefore reasonable, humane and tolerant. This civilization is an old one, as ancient as any on earth, and one of a small number of great cultures. Our language, our laws, our art, our science, our perceptions of self and of the universe, and our sense of history are rooted deep in traditions whose origins are documented in records going back before the year 1000 B.C. We are not free to act, even if we wanted to, as though the future is now and history begins tomorrow. There is a correspondence between ourselves and our history which we deny at great peril. The values based upon our belief in the essential dignity and freedom of individual man, and the preeminent value of human life were neither easily nor recently established. If we are now ready to yield them up because we do not quite understand why they should be regarded so highly, then our history may be drawing close to the time of sunset which some observers have suspected in the West for the past 60 years.

Let us today make a leap of faith and declare that we will solve the population problem, and the food, energy and environmental problems which go with it; that we will remain wary of management experts, behavioral scientists, and politicians, and control their exercise of power with the same feeling of urgency with which we control the power of the atom; and that we will try to convince ourselves that the anxiety and depression of our century is only within ourselves, and that western civilization is simply passing through one of its many recurring cycles of ennui, its "deaths of the faith" that Chesterton wrote about,[3] but is truly quite healthy and durable. Making that leap of faith may require a transcendental view of history; but one of the distinguishing features of our Mediterranean civilization has been that it imputes purpose to history in a supernatural sense. "Everything will turn out all right" has been part of our cultural heritage for thousands of years. The nerve which that sense of purpose in history has given us may be our means of survival; the necessary, but not sufficient, cause of our persevering.

Now that we have determined by faith that we shall be vouchsafed the final 25 years of this century, and that we are to be in control of those years and may even invent them, what do we see them as being like for medicine?

Two years ago all the medical school deans[4] took part in a project to forecast the future of medicine and medical education. The method was that of a Delphi survey, the description of which need not concern us, except to note that in other trials the Delphi method has proved fairly reliable. If I take out those predictions which relate mostly to medical education, and include only those which are seen as major changes in how we shall provide health services, the medical school deans' list includes four events as most likely to occur:

1. A mandatory, comprehensive national health insurance program will be enacted.
2. Public education in the use of the health system will be increased and formalized.
3. Specialty distribution of physicians will be controlled by a national system.
4. Importance of basic research will win renewed recognition.

The deans were asked to rank their predicted changes by how much they desired them. In their view the three most desirable changes were:

1. The medical profession should involve itself more with public health and preventive medicine.
2. Public education on the use of the health system should be increased and formalized.
3. Importance of basic research should win renewed recognition.

In listing the essential elements of a national health policy, Kerr White listed public education first and fundamental research second.[5] Walter J. McNerney, president of the Blue Cross Association, has called the health education of the public, "the missing link in health services."[6]

It is not easy for us as professionals to take this matter of public education seriously. We have seen our inability to persuade people to give up cigarette smoking. We are living through an epidemic of drug addiction in which educational efforts have been singularly ineffective. We all know what a dreary record of failure we have produced in the attempted control of alcoholism and obesity. We have been distressed by the tenacious ignorance of our friends and families in simple matters of human physiology and pathology, especially since we have always been at such pains to enlighten them. In spite of all the publicity given to the miraculous nature of medical "Breakthroughs," and the popularization of science, and more especially technology, over the past thirty years or so, the public seems to have gotten little useful information about health and doctors, and seems to have gotten that badly. This should not surprise us. I read in a newspaper recently that over 50 percent of all Americans may believe in astrology and 20 percent certainly do.

Public education has not really been tried. If you leave out the money spent to advertise over-the-counter drugs—which, by the way, is possibly the most effective health education the public receives—the percentage of our 145 billion dollar health bill spent for health education would be less than 2 percent, or perhaps not more than 0.1 percent of all our goods and services. Whether good public education would either improve health or reduce the costs of health services is not known; we simply do not have the data. The falling death rate from coronary artery disease during the last decade suggests that the message about high fat diets and cigarette smoking may have gotten through selectively to the population most threatened. The rising cigarette sales and the climbing death rate from carcinoma of the lung are reminders that any such hypothesis is probably nonsense. Nevertheless, we know that human behavior does change, sometimes rapidly. We characterize decades by their dominant values. We know that as teachers, parents, advisors, and friends we apparently can modify what others think and do. What we do not know is whether we can, or even should, muster the dollars and the will to effect sweeping changes in human behavior in ways which, we presently believe, might be advantageous to health.

There are problems here. Health seems important to us because we are physicians, because we are concerned day and night with problems of pain, disease, injury, and death. It may even seem at times the *summum bonum*. Others do not see it that way most of the time, and even we have ultimate concerns which do not include our physical, or even emotional, well being. Demanding that we fasten our seat belts and reminding us that cigarette smoking may cause cancer may at worst be unwarranted intrusions upon our constitutional rights, or at best, the meddling of an overgrown bureaucracy, which, to deal with its own guilt, has turned puritan, but whose business ought to be elsewhere. Some of the proposals for more public education call for a National Center for Health Education within the Department of Health, Education and Welfare. That may be proper, and it may be the only way our many efforts can be brought together. It certainly is the way things are usually done. The vision of federal government assuming control of a vast public education effort for any cause is a frightening prospect.

Education of the public in matters of health needs nevertheless to be accomplished. Charging government with the task may be the best way of guaranteeing failure. Effective education should improve the health of the nation in a way and to a degree that nothing else could do. It should reduce the demand upon health services and reduce the cost of medical care, and help to assure that necessary services are more generally available. It should make it possible to provide for excellent services in response to an orderly and restrained demand.

The following goals might be considered:

1. Everyone with reasonable understanding should understand what is presently known about the prevention of illness. It is not much and it is not complicated. There are a relatively small number of immunization procedures. There are matters of diet, exercise, stress, smoking, drinking and fast driving which are indisputably important to a normal life span in a reasonable state of health. Most people can learn to drive an automobile; most should be able to learn these things.

2. Everyone should know that most illnesses, both emotional and physical, are trivial and self-limited, and do not benefit from medical care. There are cheap and safe measures which people can use to care for themselves during these short-lived illnesses.

3. The important technique of emergency medical treatment can be learned by almost everyone; care given by an informed companion in the first fifteen minutes of an emergency may be the only care which makes the rest of the treatment worth the effort.

4. The workings of the health system are complex, but can be mastered. Perhaps if we had to explain them to a neighbor we might find ourselves tidying up the disorder we have learned to tolerate.

Lewis Thomas[7] suggested that the families of physicians might provide some insight about how to make intelligent use of medical care:

"If my hunch, based on the small number of professional friends, is correct, these people appear to use modern medicine quite differently from the ways in which we have been systematically educating the public over the last few decades. It cannot be explained away as an instance of shoemakers' children going without shoes. Doctors' families tend to complain that they receive less medical attention than their friends and neighbors, but they seem a normal, generally healthy lot, with a remarkably low incidence of iatrogenic illness.

"The great secret, known to internists, and learned early in marriage by internists' wives, but still hidden from the general public, is that most things get better by themselves. Most things in fact are better by morning."

Here is a new insight. Much of the way in which people behave in sickness may be the result of our teaching and the following of our precepts. Medical care or rather medical attention has been oversold, and the people have bought and expected the impossible. If we did it, then we can undo it, and it may be our moral responsibility as quickly as possible to get about the business of telling honestly what medicine can do and what it cannot do. Our patients have a right to know that.

Health education can be carried out through our existing institutions. It can and should be a part of the regular curriculum in the schools. Getting it there in proper form and decent balance is our responsibility.

"...a more satisfactory treatment..."[1]

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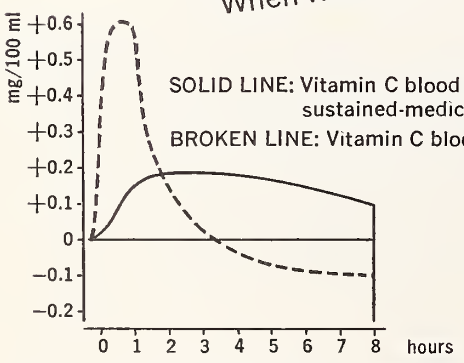

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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There is no reason why high school biology should not be human biology.

In the university, if science is to be required for a bachelor's degree, it should be the science of human biology. Just as no one should leave high school or college without the ability to speak and write the mother tongue, so no one should leave without a reasonable knowledge of human physiology and pathophysiology.

Hospitals and employers—the latter as a part of their health plans—should provide for continuing education in matters of human health and in the ever popular science of human biology. It may be that this cannot be done without making some neurotics almost mad, and some depressives almost suicidal, but I do not believe it. If zealotry and misinformation are assiduously kept out, there should be no serious problems.

As physicians we must first be certain that what is presented in the schools and colleges, and in our offices, in no way violates the truth and is useful information. Following our first clinical dictum, it must do no harm. It should emphasize health and not disease, and health as a means for living and not as an end to be sought for itself.

Second, we should reinforce in our patients whatever true and important concepts they may already have learned about health and disease, and we should seek out what they do not know and help them to learn. For most of the patients we shall see and during most of the hours we shall spend in caring for them, our most important task may be education. What the patient learns about himself from his encounter with us may be the most important benefit deriving from his unfortunate experience with illness.

Consider some of these assertions:

1. 80 percent of cancer is environmentally determined and hence potentially preventable.
2. As far as we can tell, most of coronary atherosclerosis is related to diet, exercise, and stress and is potentially preventable.
3. Almost all hypertension is treatable.
4. The two dental diseases, periodontal disease and caries, are preventable.
5. A 50 mile per hour speed limit enforced would save 20,000 lives each year in this country.
6. Fewer than 60 percent of our children are immunized.

The commonest term we use in our language for physician, and the term by which we address him, means teacher. All of us who have to do with caring for others are first of all teachers. This is our vocation for the last quarter of this century, to maintain health through better understanding and to prevent disease through knowledge shared with our patients. This is the high technology for the end of the century.

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(c) Visitors shall not be permitted to smoke in rooms or wards restricted to patients who do not smoke.

(d) Visitors shall be permitted to smoke only in designated areas.

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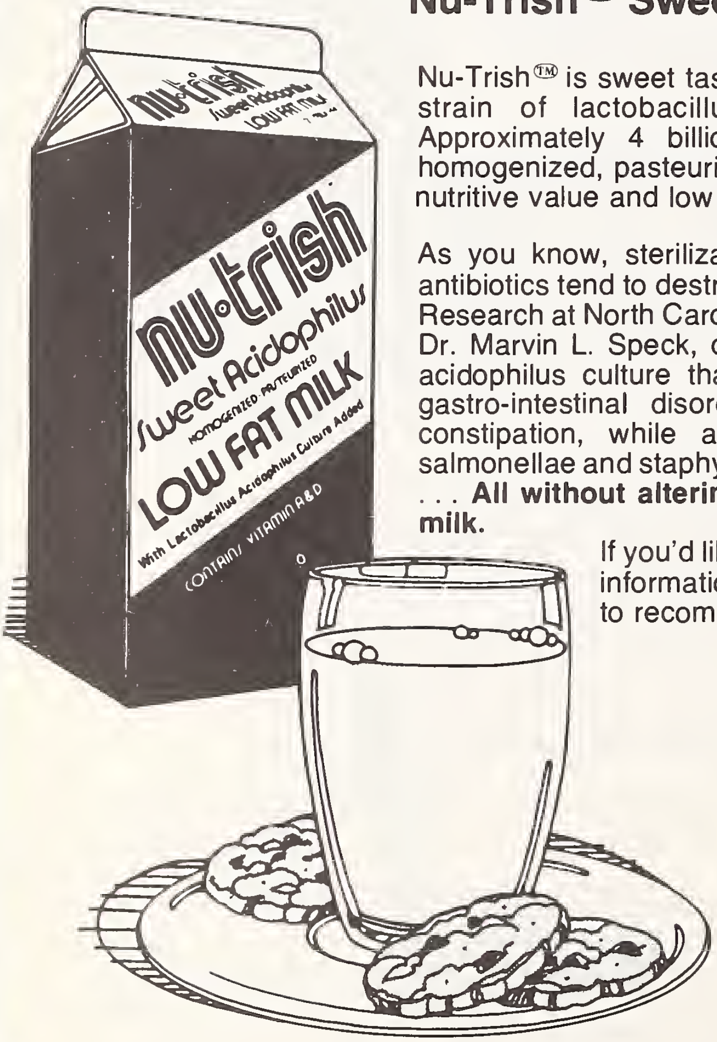

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Month in Washington

The Maximum Allowable Cost (MAC) drug program went into effect towards the end of August with little visible activity. First signs of life will probably appear in the late fall when MAC's advisory committee will meet to consider the initial prescription drugs for the program.

Court decisions in the various counter suits, including that of the American Medical Association, are not expected anywhere in the near future.

The three-year-old brainchild of former Health, Education and Welfare Secretary Caspar Weinberger, MAC sets price ceilings on certain widely used drugs in effort to discourage prescription of brand-name products. Physicians would have to stipulate that brand-name drugs for Medicare-Medicaid beneficiaries are medically necessary on the prescription in order to prevent the pharmacist from filling the order with the lower cost generic drug. In states with anti-substitution laws, patients would have to make up the difference in price if a brand-name is ordered.

MAC had been scheduled to go into effect four months ago, but retail druggists joined drug manufacturers and the AMA in protest, causing the four-months postponement.

In a letter to HEW Secretary David Mathews, the Pharmaceutical Manufacturers' Association said the original postponement was to resolve "confusion and opposition" surrounding MAC. "It is our observation that such hopes have not been realized, and in fact, the situation is even more chaotic today," said PMA President C. Joseph Stetler.

The AMA and PMA have a consolidated suit against MAC pending in Chicago District Court. Other litigation has been launched by the National Association of Retail Druggists (NARD), the Private Medical Care Foundation, Inc., and Congress of County Medical Societies. Citing these, along with a petition filed with HEW on July 27 by the American Pharmaceutical Association (APHA), and the "continuing concern," and "growing dissatisfaction" of many individuals and organizations, Stetler said, "there is every reason to further delay . . . the MAC program."

The MAC proposal has many controversial aspects, not the least of which is the fact that it was an administrative decision without any legislative backing in the language of the Medicare and Medicaid laws. Thus, one of the criticisms is that it represents "government by regulation" and violates the Medicare law's prohibition against interference in the practice of Medicare.

Weinberger claimed MAC would save the government $60 million a year but another former HEW Secretary, Robert Finch, disputed the claim. Finch, now a private citizen in California, said the bureaucratic cost-of-running the program would offset any possible savings. In a letter to the *Wall Street Journal* last year, Finch also argued that bioequivalency cannot be demonstrated at present. The MAC regulations pose "the key question of whether the patient receives the exact prescription the doctor ordered," he wrote.

Physicians for the most part will be affected with Medicaid patients, since there is no substantial outpatient benefit for Medicare drugs.

In addition to the control program, HEW will send all physicians a list of most frequently prescribed drugs along with the prices community pharmacies pay for them.

No federal sanctions are provided for physicians who decide to write out the "medically necessary" prescription message.

Before a Maximum Allowable Cost can be established for drugs, the Food and Drug Administration must first indicate that there are no bioequivalence problems among its several brands. The HEW Pharmaceutical Reimbursement Board would then propose a MAC at a level equal to the lowest cost at which the drug is generally available to providers. Before the MAC can be established officially it must be reviewed by a non-governmental advisory committee and published in the *Federal Register* for comment.

The regulations establish both the Pharmaceutical Reimbursement Board and the 5-member outside advisory group.

HEW said about one-fourth of commonly prescribed drugs are available from multiple sources. However, the number for which bioequivalence problems can be ruled out is smaller.

The reimbursement that a pharmacist receives for drugs he provides Medicare and Medicaid patients will be based on an estimate of his cost of buying the drug plus a dispensing fee, or on his usual charge to the general public, whichever is the smaller. Program agencies such as the state Medicaid program would make the estimates according to price information supplied on a regular basis by HEW.

Druggists protested a HEW wholesale price list designed to guide state agencies which the druggists said contained "out-of-date" low prices.

John Ball, MD, Assistant to the Director of FDA's Office of Quality Standards, recently said it may be as long as six months before the first small group of drugs has gone through the process for declaring them ready for MAC.

Prepared by the Washington, D.C., Office of the American Medical Association

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The Republican Party has gone on record against compulsory National Health Insurance. The platform plank on health adopted by the delegates at the convention in Kansas City was in sharp contrast to the Democratic plank endorsing a comprehensive national plan financed by regular and Social Security taxes.

The GOP statement on health supported extension of catastrophic protection "to all who cannot obtain it." The private health insurance system should be utilized to "assure adequate protection for those who do not have it," the platform said. "Such an approach will eliminate the red tape and high bureaucratic costs inevitable in a comprehensive national program."

The platform on health did not condemn outright any national health insurance program as a group of conservatives led by Sen. Jesse Helms (R-N.C.) had urged. The flat opposition to a "compulsory" NHI program, however, provided a sufficiently broad umbrella to mount an attack on many NHI proposals and specifically on the Kennedy-Labor bill. Some delegates interpreted the plank as opposition to any "comprehensive" national plan.

President Ford this year did not renew his previous endorsement of the Nixon Administration's NHI plan calling for employers to provide employees with comprehensive private health insurance, federalizing Medicaid, and subsidizing a catastrophic benefit. Instead, Ford asked Congress for a catastrophic benefit for Medicare beneficiaries. He said the so-called mandated plan would be too expensive at present.

On abortion, the Republicans supported "the efforts of those who seek enactment of a constitutional amendment to restore protection of the right of life for unborn children." The Platform conceded that the issue "is one of the most difficult and controversial of our time . . . undoubtedly a moral and personal issue" involving "complex questions relating to medical science and criminal justice."

The Supreme Court's ruling on abortion permitting it until the last stages of pregnancy was "an intrusion into the family structure through its denial of the parents' obligation and right to guide their minor children," said the Platform.

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The House has passed the so-called toxic substances act which gives the Environmental Protection Agency new powers to prevent hazardous chemicals from being marketed. A provision was added on the House floor to ban within two years the manufacturers of PolyChlorinated Biphenyls (PCBs). The chemical has been found in fish in the Great Lakes and the Hudson River and traces discovered in humans. PCBs are used in electrical equipment and enter the food chain through waste dispersal in waterways.

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The HEW Department has awarded contracts to establish five centers for health planning in Madison, Wisconsin; Columbia, Missouri; Denver; San Francisco; and Boise, Idaho. The contracts, totaling $3.2 million will provide training and consultation to health planners in 24 states, Guam, American Samoa, and the Trust Territories of the Pacific. HEW established five other centers for health planning earlier this year in Boston; Syracuse, New York; Fort Washington, Pennsylvania; Atlanta; and Houston.

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The House Ways and Means Subcommittee on health has postponed until mid-September hearings on issues involved in increasing physicians' fees and possible revisions in the present reasonable charge reimbursement system used in the Medicare program.

The Subcommittee will hear testimony on:

Factors in the present system which influence physicians to accept assignment or to direct bill; advantages and disadvantages to requiring physicians to accept assignment in any case; factors contributing to geographic variations in physicians' reasonable charges, including differences in urban and rural charges; implications of the differences in charges between primary care physicians and specialists, and the effect of such fee differences on the selection of certain specialties by physicians; feasibility and desirability of reimbursing physicians on a fee schedule basis and the factors which would be used to adjust the schedules to reflect the variation in physicians' cost of practice; the role of relative value scales in determining physician fees; results of experimental reimbursement programs; and comments on legislation already pending which would amend Medicare reimbursement of physicians.

The Subcommittee also will examine the issues involved in the payment of physicians in teaching hospitals under Medicare. However, Congress will not be able to act on such matters this year.

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President Ford has named Robert Nelson Smith, MD, Toledo, Ohio, anesthesiologist, to be Assistant Secretary of Defense for Health Affairs. Dr. Smith, who served as President of the Ohio State Medical Association in 1969-1970, succeeds James Cowan, MD, who resigned.

Dr. Smith graduated from West Point in 1943 and served in the Air Force from 1943 to 1948. He received a Master of Science degree from Massachusetts Institute of Technology in 1945 and his medical degree from the University of Nebraska College of Medicine in 1952.

The 56-year-old physician is a member of the AMA, the Ohio State Medical Association, and the American Society of Anesthesiologists.

A.B.A. Hears Report From Professional Liability Commission

At the August meeting of the House of Delegates of the American Bar Association (A.B.A.), the Interim Report of the A.B.A. Commission on Medical Professional Liability was presented, containing a variety of recommendations for action in four categories: medical disciplinary boards, arbitration, joint underwriting associations, and tort law changes.

In its written report, the Commission recognized that the medical liability problem is not just a matter of restricted insurance availability, but stems from a number of other root causes. "Complaints by physicians and hospitals about large increases in insurance premiums and the difficulty in obtaining adequate insurance coverage are but symptoms of deeper problems in health care and in the current tort law-insurance system as it has been applied to medical malpractice claims," the report stated. "While efforts by state legislatures and insurance departments to assure the availability of insurance are important, and while many of the tort law changes which have been enacted are appropriate, . . . it is the Commission's considered opinion that focusing exclusively on insurance availability and tort law changes will not significantly affect premium levels or assure insurance availability in the long run," the report went on to say.

Among the many factors the Commission deemed responsible for the current problems were the "increased readiness of patients to question the quality of care given them and to ascribe responsibility for poor outcomes to health care providers," expansion of the scope of liability occasioned by "liberalization by appellate courts . . . of substantive and procedural rules of law so that a plaintiff has an easier time in proving entitlement to damages" together with "the rapid escalation . . . in the amounts of damages awarded by juries and the interrelated contingent fee method of compensating lawyers in this field," and the impact of actuarial uncertainty for insurance carriers brought about by "increased frequency and severity of claims" plus higher costs of settling them. Such factors have served to shift the locus of medical risk-bearing away from the patient to the medical care provider and his insurance carrier. In an earlier talk to the Camden County (New Jersey) Bar Association, Commission Executive Director Thomas S. Chittenden said that there was "a very real possibility of (Federal) governmental intervention in the problem unless all parties concerned redoubled their efforts to solve it."

Among the tort law reforms being advocated by the Commission are elimination of the *ad damnum* clause in lawsuits, no provider liability for guaranteed medical results not in writing, elimination of double recoveries through collateral sources, periodic payments of awards, sliding-scale contingent-fee systems for lawyers, elimination of punitive-damages awards, and removal of ceilings on awards for economic losses. Other reforms endorsed by the Commission include advance notice by the plaintiff of intent to sue, a general two-year statute of limitations tolling from date of occurrence, a cause of action based on lack of informed consent to be treated as an action in negligence rather than in battery, and a number of specific recommendations as to medical discipline, confidentiality of medical records, and expert witnesses.

With respect to arbitration, the Commission recommended that voluntary, binding arbitration be made available by law in every state for disposing of medical injury disputes. The Commission also advocated that each state enact legislation authorizing creation of joint underwriting associations (JUAs) to be activated in case insurance availability reaches critically restricted levels.

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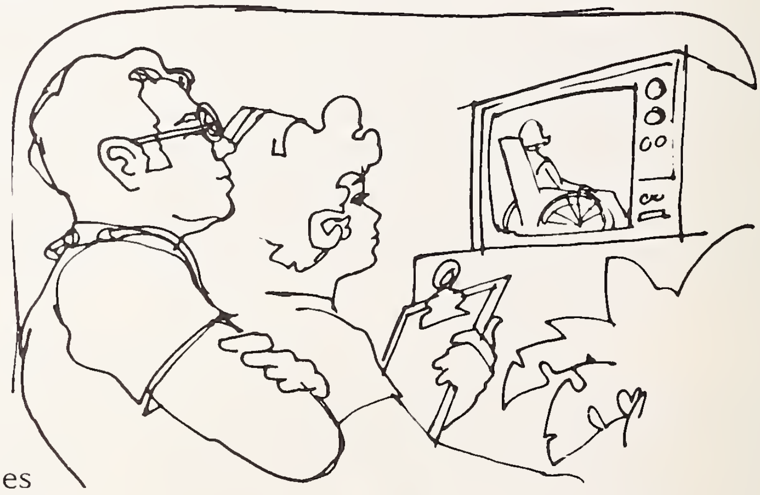

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A Summary of AMA, Medical and Health News

HEW's new proposed Utilization Review Regulations show "beneficial changes" from earlier regulations published in November of 1974, the AMA said, but the Association urged the deletion from the regulations of the requirement that elective surgical or other elective procedures under Medicare and Medicaid be delayed until hospital admission had been determined medically necessary. The AMA stated that the requirement could apply to almost every procedure and could delay the treatment of patients and that "any delay prior to proceeding with the surgery or procedure will increase the hospitalization cost." Among the beneficial changes, the AMA said, are the authorization of medical staffs to develop their own criteria for reviewing hospital admissions, and the right of the medical staff to establish a list of diagnoses, conditions, or procedures which would need no further justification for admission.

AMACO—American Medical Assurance Company—the AMA's reinsurance company will provide reinsurance backing and technical support to qualifying physician-owned medical liability companies in the near future. Representatives of state medical societies met in Chicago last month and heard discussion from AMA staff, reinsurance and insurance officials on the subject. Fifteen physician-owned companies are now in operation or will be in a few months.

The AMA asked the FTC to "clarify its clarification" of a statement submitted in the Federal Trade Commission's antitrust complaint against the AMA, the Connecticut State Medical Society and the New Haven County Medical Assn. In the statement the FTC said its complaint charges the AMA "with a great deal more than merely imposing 'certain restrictions on advertising' " by physicians. It said the "entire panoply of restrictive agreements contained in the *Principles of Medical Ethics* is under attack." The AMA said the FTC complaint violates due process provisions of the Administrative Procedure Act and is so "nebulous" that a defense cannot be prepared. The antitrust complaint is scheduled to be heard Oct. 18 before an FTC administrative law judge.

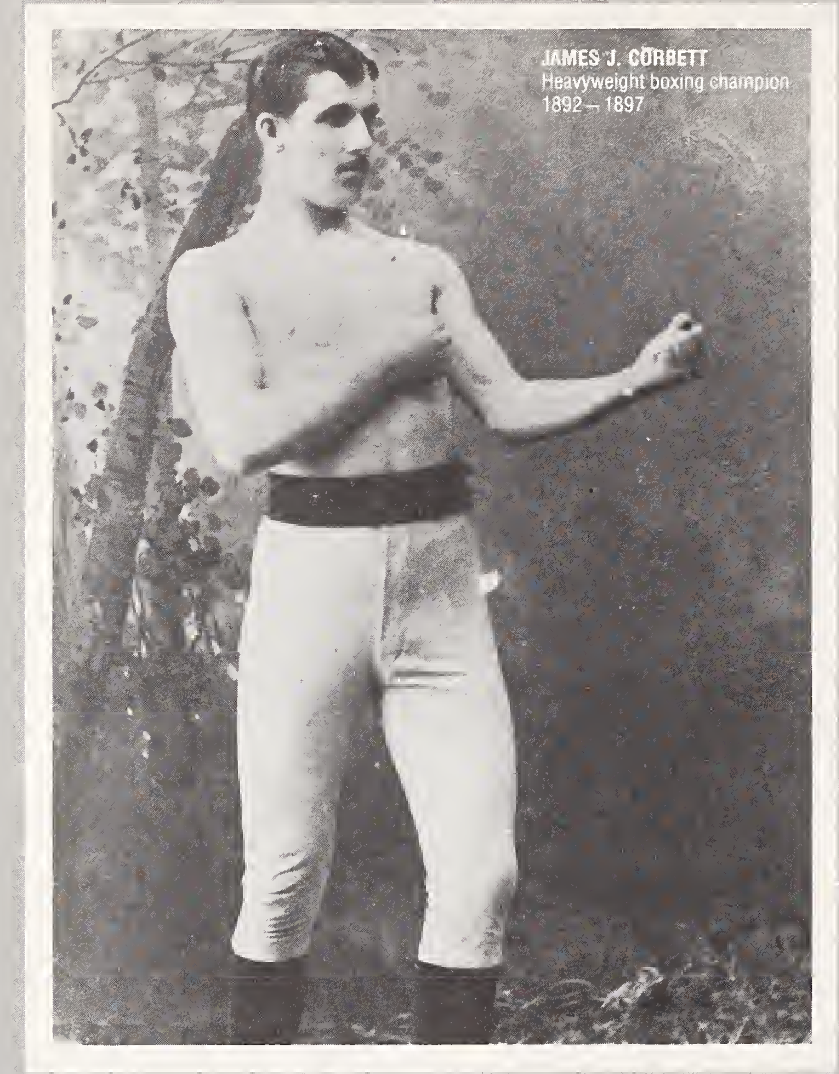
The AMA is aiding the medical staff of St. John's Regional Medical Center in a lawsuit before the South Dakota Supreme Court. The hospital is appealing a circuit court decision invalidating changes in the medical staff bylaws on the grounds that they were unilaterally amended by the hospital's board of directors without the approval of the medical staff. At the request of the South Dakota State Medical Assn., the AMA began helping the medical staff while the case was before the circuit court.

The AMA will participate in HEW's new "fraud and abuse initiative" program to crack down on the "dishonest activities of some Medicaid providers and clear the image of the overwhelming majority who are honest." C. Willard Camalier Jr., MD, chairman of the AMA's Council on Medical Services, who was a speaker at the meeting, said the AMA was enthusiastic about the HEW effort because "we too are convinced that a very small minority of Medicaid providers are actually engaged in fraudulent or abusive practices." Dr. Camalier added that the AMA's newly established Ad Hoc Committee on Medical Discipline could offer suggestions on methods of dealing with the problem.

The AMA asked to join as a co-plaintiff the state of North Carolina's lawsuit against the federal government's National Health Planning and Resources Development Act. The AMA charges that the planning law, passed in 1974 and now being implemented, violates at least five amendments to the Constitution.

A successful countersuit by an Illinois physician against a patient and the attorneys who had charged him with malpractice was termed "significant" by AMA President Max H. Parrott, MD, "because it serves notice that doctors intend to fight back against non-meritorious cases and puts lawyers on notice that they are placing themselves in jeopardy if they do not adequately investigate a case before filing it." If the case stands up on appeal, Dr. Parrott said, it should have "a beneficial effect on the professional liability situation in the long run."

Famous Fighters



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The President's Page

The Comprehensive Health Care Insurance Act of 1975 (HR 6222) continues to have the endorsement of the AMA. At the 125th annual meeting of the AMA in Dallas, Texas this June resolutions were introduced by delegates from New Mexico and from California urging that the AMA rescind its previous commitment to this act and rather take an outspoken stand against all forms of National Health Insurance. This proposal stimulated much discussion and received a fair amount of support. However, what seems to me wiser heads prevailed and the following resolution was adopted: "RESOLVED, that the Association continue its support of HR 6222 for the provision of both basic and catastrophic coverage where such is needed. . . ." This action puts the AMA in the responsible position of having a positive stance in the matter of legislation involving National Health Insurance. It allows us to present a program that has been considered thoughtfully, one that we feel can be meaningful and provide the help that is needed in a realistic manner. We can present a program which is realistic, which can be met within a reasonable economic national budget and which does not go overboard in idealistic planning that is fiscally totally unsound. The AMA has estimated that the additional federal cost of HR 6222 exclusive of coverage of the unemployed would be 2.5 billion dollars. None of the other bills being considered would come close to that figure and it has been estimated that the Kennedy-Corman National Health Service bill would cost as much as 90 billion dollars.

The AMA has supported some form of National Health Insurance since 1970 when the Medicredit Bill was introduced into the 91st Congress. Revised bills were introduced into the 92nd and 93rd Congresses and now HR 6222 in the 94th Congress. The basic principles of all these bills have been the same. "Any national plan should build on private existing insurance and should *not* be operated as a government service. . . . The plan should be financed by private insurance and health care systems. The plan should be financed by private payments for insurance coverage for those with the ability to pay and from general tax funds for lower income groups."

The AMA has opposed all proposals that call for compulsory payroll taxes and has favored plans that provide comprehensive and catastrophe care paid for as much as possible in the private sector.

HR 6222 proposes a tax deduction plan for both individuals and employers. Employers would be required to provide comprehensive health insurance coverage for their employees on a shared cost basis. The employee would have the option of accepting this or not. Comprehensive insurance would thus be available to the employed through private insurance coverage. Federally subsidized co-insurance for the jobless or self-employed would be part of the plan and there would be no premium at all for the poor.

In continuing to support this program the AMA evidences real concern for a rational program; one that meets the true needs of the people but one that leaves financing where it belongs, in the private sector, and introduces government assistance only in those areas which do not have the means of working through the private sector. This should be a concept that most of us can accept and promote.

Hilliard Spitz, M.D.
President

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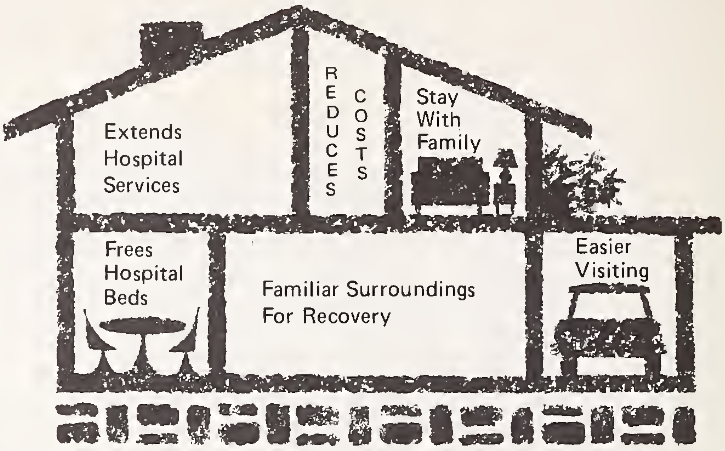

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EDITORIALS

Why the Connecticut Tumor Registry: Can it Really Help Patients?

What role does the Connecticut Tumor Registry play in the overall effort at cancer control? Is it just an interesting toy that collects data for the amusement of the statisticians? Or does it really bring benefit to the people of Connecticut?

"The oldest population-based registry in the United States" and "the largest"—the Connecticut Tumor Registry grew out of a need felt by "physicians, health professionals and laymen." J. Wister Meigs, M.D., has described in this issue of *Connecticut Medicine* its development from early embryonic well into the adolescent stage—from which it is now about to burst forth fully computerized. Data from the Connecticut Tumor Registry is cited all over the world, but what help devolves upon our local citizenry?

With the improved methodology a sudden increase in incidence of a particular cancer—especially in a local area—will be evident and efforts can be directed toward finding the cause. For instance, the epidemic of liver angiosarcomas among vinyl chloride workers. Methods of prevention of cancer can be evaluated with the aid of statistics from the Registry, and their effectiveness appraised.

The same holds true for treatment. Figures from the Registry can tell us physicians how well various treatments are reducing the mortality. True, statistics don't apply to the individual, but this weight of experience can indicate general trends—the odds. Knowing the track record helps one decide which horse to bet on. While the time curves for recurrence may give patients some peace of mind when they remain free of disease beyond a particular date, the very act of the physician obtaining this information serves two functions: (1) to promote conscientious follow-up and (2) to provide a basis for guidelines, such as the intervals at which a particular cancer should be followed and what examinations should be done at the various visits. The value of such information is obvious from the amazing demand for the "Follow-up of Cancer—A Handbook for Physicians," much of the material for which came from the Registry.

Interesting, perhaps unusual, is the progress of cooperation in our fight against cancer. The Connecticut State Medical Society promoted the 1935 legislation that brought the Registry into being under the Department of Health. Over a decade later the American Cancer Society—Connecticut Division collaborated with these two organizations in publishing handbooks on cancer, one for physicians and one for dentists. The same trio in 1949 was responsible for instituting the state-wide tumor clinic program. In order to make the Registry more useful to the physicians and of more benefit to the population, the Connecticut Cancer Epidemiology Unit was formed by the two medical schools, the Connecticut Hospital Association and the Connecticut State Medical Society, with Dr. Meigs as its inspired Executive Director. The Yale Comprehensive Cancer Center through its Regional Activities program gathered together all six of these organizations into the Connecticut Cancer Consortium. Although one might anticipate competition with each other for jurisdiction, funds and prestige, these and other groups—especially the Community-Based Cancer Control Program and the Capitol Area Health Consortium—are cooperating by dove-tailing projects, by division of labor, by avoiding duplication, by providing assistance and mutual promotion.

We in Connecticut have a right to be proud of our Registry, and very grateful for the help it can give us.

Grateful too, we are for the tremendous interest and effort of Dr. Barbara Christine and Dr. Harold S. Barrett, who dedicated so much of the later part of their lives to cancer control. Their deaths are a great loss—but could be a tremendous stimulus. If we physicians express our desires, our needs, then, and only then, can the Registry be of maximum benefit to us and our patients. "While it is not a normal function of the Registry to coordinate cancer activities in Connecticut, the Registry is in a unique position to assist those with this responsibility."

E. Tremain Bradley, M.D.

Chairman of the Cancer
Coordinating Committee

Football and the American Dream

We live in an era of fallen traditional heroes. The soldier, statesman-politician, self-made corporate giant have become anti-heroes under the probing glare of the mass-media, especially television, which has also eroded our old-fashioned strong but not militant Nationalism by focusing sharply on our recent past history. Our increased leisure time and pre-occupation with economics has thus thrust upon us a new hero. O.J. Simpson now fills the void-college All-American, premier professional player, articulate Olympic sportscaster, and millionaire. Stan Musial is his own large corporation and Catfish Hunter will be collecting deferred salary for many years to name a few others. The American Dream is not dead and through the stimulus of Title IX girls may now also strive for the goal. The tremendous interest in Little League, Pop Warner, age group swimming among many others attest to this fact. By the time high school is reached the problem of teaching prevention of sports injuries becomes significant, however, and this is where medical input can help.

In football in particular the pressure to emulate the professional is great and the size of the high school player now generates forces strong enough to cause serious injury. Those of us involved in sports medicine applaud Dr. Albright (p. 677) for zeroing in on one of the problems we would like to prevent in football, head and neck injury. There will be more information available from two ongoing problems[1] evaluating these injuries as well as continued studies on the long term effects of the use of the head in blocking and tackling such as the Iowa studies quoted by Dr. Albright. The American dream, football-style, turns into a life-long nightmare when one has to deal with a permanent quadriplegic.

The football rules makers have come to grips with the problem as reflected by the 1976 rules changes of the NCAA and National Federation of State High School Athletic Associations. Both groups have changed their rules regarding spearing, butt-blocking, and face-tackling. However, NCAA rules still use such words as "deliberate" and "intentional" making decisions reliant on the judgment of an official calling the play. National Federation rules this year specifically define butt-blocking and face tackling using either crown or face mask area of the helmet and clearly state, "No player shall use butt-blocking or face-tackling techniques."

Connecticut is one of three states which still uses NCAA rules for high school football. Whether or not leaving more leeway for judgment calls by the official and possibly increasing the danger of injury is an acceptable risk at the college level is a matter of debate; there should be no discussion at the high school level. The more stringent rules are available and adapted to high school play. It is well demonstrated that play under these rules is just as tough and competitive. Playing the game of football exposes the player to a risk of injury. If the peril of catastrophic head and neck injury can be minimized by rules changes which still allow a tough competitive game it should be done. There are many precedents in past years where rules changes have been made to improve safety.

Through the Sports Medicine Committee of the Connecticut State Medical Society we have opened communication with the Connecticut Interscholastic Athletic Conference and hope through this contact and dialogue to switch Connecticut high school football to National Federation rules and thus to provide each high school player the best chance of avoiding the nightmare of permanent head or neck injury.

Norman A. Zlotsky, M.D.

Chairman, Sports Medicine Committee
Connecticut State Medical Society

REFERENCES

1. National Football Head and Neck Registry, Temple University School of Medicine, 3401 North Broad Street, Philadelphia, Pa. 19140.

Spinal Cord Injury Survey, National Athletic Injury/Illness Reporting System (NAIRS), Pennsylvania State University, 102 Sports Research Building, University Park, Pa. 16802.

Science or Rhetoric

Biofeedback: A Contemporary Overview authored by Drs. Ward J. McFarland, Jr., and Remo Fabbri, Jr. affords us the opportunity to become familiar with the current posture of this treatment modality. Although it could very well be "an intriguing new approach to the treatment of psychosomatic disorders," the raison d'etre for its presumed efficacy is refreshing. It may very well be true that the improvements attained with this therapeutic approach may be due to the capacity of the individual to dilute the intensity of the fixed anxiety disability. But is the presence of anxiety, acute or chronic, necessarily a liability? Isn't it really a barometer of turbulent emotionality? It would appear that biofeedback relaxation training makes it possible for the autonomic system to "learn new and more adaptic patterns that are alternatives to stress related tension." It seems that by the use of these bio-medical instruments, the patient becomes intimately acquainted with how a certain physiologic system functions and "learns how to modify or control what is occurring."

Needless to say the electronic monitoring system is rather sophisticated and requires considerable expertise in its application. These monitoring devices send forth reinforcing signals when the patient reaches a relaxed state. These devices make available to the patient an array of visual and auditory responses that relate to his alpha (EEG) wave activity, blood pressure status, muscle tonus, and galvanic skin values. The patient attempts to modify these biofeedback signals by utilizing techniques that induce relaxation similar to those of behavioral therapy.

In fact Kiev[1] has termed biofeedback relaxation training (BFT) an electronic version of the familiar behavorial therapy which is traceable in turn to Pavlovian or classical conditioning therapy. It is a fact that by "consciously controlling panic symptoms, one may enter threatening situations with greater confidence and not precipitate an attack by anticipating one." By performing breathing exercises and muscle relaxation routine, attacks may be averted. It seems that with this conditioning and learning, the patient may somehow avoid or dispel the anxiety that alters one's capacity to cope with threatening situations. It has been postulated that biofeedback "may be useful in treating phobias, panic states, obsessive disorders, bronchial asthma, dysmenorrhea, sexual problems, psychosomatic (tension) headache, or muscle spasm—and even stuttering.

The authors stress the effectiveness of this therapy in such challenging clinical entities as tension headache, migraine, spasmodic torticollis, trapezius spasm following neck injury, and some other muscle spastic states. Reference is likewise made to beneficial results achieved with this technique in certain cardiac arrhythmias with some occasional successes in the treatment of essential hypertension.

The spectrum of clinical entities that this technique purports to conquer is impressive but unconvincing at this point. It is easy to concur with the authors that "exaggeration of its efficacy have threatened to undermine its just position as a medical therapy." This would be unfortunate. It is refreshing to perceive this new approach in therapy. Maybe when man learns how to exercise control over his physiological processes and functions, he may yet succeed in attaining inner tranquility. It is proper to note that other techniques such as Zen, Yoga, Transcendential Meditation, hypnosis, faith-healing, reassurance, tranquilizers, and placebos, as mentioned by the authors, may likewise give similar results by controlling or reducing anxiety. In addition, it has not been possible to devise satisfactory controls in biofeedback research.

An excellent review of this provocative subject matter by Neal E. Miller, PhD, Applications of Learning and Biofeedback to Psychiatry and Medicine[2] is rewarding reading to those of us who would like to be further fascinated by this intriguing therapy regimen. Although the "gadgetry" involved is relatively expensive, it warrants inclusion in our treatment arsenal. Further investigative studies are imperative with better controls for placebo effects, rigid comparisons with other techniques, and valid long-term follow-up reviews of results. "This is a new area in which investigators should be bold in what they try but cautious in what they claim."[2]

Charles M. Krinsky, M.D.

REFERENCES

1. Kiev Ari, M.D., BFT: Psychiatry goes "electronic" *Drug Therapy, June 1976*
2. Miller Neal E, PhD: Applications of Learning and Biofeedback to Psychiatry and Medicine. pp. 349-365. *Comprehensive Textbook of Psychiatry / II* Edited by Alfred M. Freedman, M.D., Harold I. Kaplan, M.D., Benjamin J. Sadock, M.D.

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Drug substitution In most states, pharmacy laws, regulations or professional custom stipulate that your non-generic prescriptions be filled with the precise products you prescribe. But in the last five years, a dozen or more State laws have been changed, permitting the pharmacist in most cases to select a product of the same generic drug to fill any prescription.

Ironically, this dilution of physician control has taken place against a background of growing evidence that purportedly equivalent drug products may be inequivalent, since neither present drug standards nor their enforcement are optimal. In fact, the FDA itself says it has not enforced the same standards for hundreds of "follow-on" products that it had applied to the original NDA approvals. Thus physician control over patient therapy is being eroded with a risk that patients may be exposed to drugs of uncertain quality.

The major advertised claim for substitution is reduced prescription prices for consumers. Yet no documentation of any significant savings has been produced.

MAC Maximum Allowable Cost, MAC for short, is a Federal regulation designed to cut the Government's drug bill by setting price ceilings for drugs dispensed to Medicare and Medicaid patients. Unless the prescriber certifies on the prescription that a particular product is medically necessary, the Government intends to pay only for the cost of the lowest-priced, purportedly-equivalent, generally-available product. The effect of the program may be that elderly and indigent patients will be restricted to products which someone in Washington believes are priced right. Practicing doctors will have little to say about administration of the program, since Government will have absolute authority to make its choices stick.

The drug lag The future of drug and device research depends upon a scientific and regulatory environment that encourages therapeutic innovations. The American pharmaceutical industry annually is spending more than $1 billion of its own funds and evaluating more than 1,200 investigational compounds in clinical research. Disease targets include cancer, atherosclerosis, viruses and central nervous system disorders, among others. But there is a major barrier to the flow of new drugs to your patients: The cost of the research is more than ten times what it was, per product, in 1962; and whereas governmental clearance of new drug applications took six months then, it commonly consumes two years now.

The FDA needs adequate time, of course, to consider data. But it is equally clear that the present approval process contributes to needless delay of needed therapy. That's why the increased efficiency of the drug approval process is vital to all our futures.

If these issues concern you, we suggest that you make your voice heard—among your colleagues and your representatives in State legislatures and in Washington.

It could make a difference in your practice tomorrow.

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Executive Director
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Leonard R. Tomat
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CALL

SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1976 Semi-Annual Meeting of the House of Delegates will be held at the Sheraton Park Plaza Hotel, New Haven, commencing at 9:00 A.M. on Wednesday, November 17.

Hilliard Spitz, President
Timothy F. Nolan, Speaker of the House
Louis C. Backhus, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides:

Resolutions may be introduced by any Active or Life Member of The Society, in compliance with the following provisions.

a. *All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*

b. *Component county associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc. be considered regular business if they are received later than fifteen days prior to the date of the meeting.*

c. *Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of The Society at any time and shall be considered as regular business.*

d. *Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provision of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

Summary of Actions

Council Meeting

Thursday, August 19, 1976

Attendance

Present were: Drs. Spitz, Friedberg, Freedman, Backhus, Johnson, Grendon, Van Syckle, Hess, Bradley, Granoff, Robinson, Harkins, James, Mendillo, Krinsky, Beck, Vidone, Magram, Parella and Zlotsky. Zlotsky.

Also present were: Mrs. Lindquist, Mrs. Arafeh (CSMS Auxiliary), Dr. Massey, (UConn Medical School), Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Nolan, Canzonetti, Cramer, Fabro, Kamens, Sonnen, Whalen, McGarry, Ahrens, Sadowski, Eslami, Barrett and Middleton.

Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of July 21, 1976.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Robert H. Green, 28 Crescent Street, Middletown
Milton S. Godfried, 85 Trumbull Street, New Haven
William J. Zenkowski, 207 South Elm Street, Waterbury
Henry Merriman, 134 Grandview Avenue, Waterbury
Francis H. O'Brien, 1211 West Main Street, Waterbury
Jasper A. Smith, 134 Grandview Avenue, Waterbury
Winfield L. Wight, 24 Goodwin Court, Thomaston

Date of Next Meeting

The Chairman scheduled the next meeting of the Council for Wednesday, September 29, 1976.

Old, New and Special Business

Resignation

Committee on Public Health: It was VOTED to accept the resignation of Frank M. Geiser, Middletown, as a member of the subject Committee.

Acknowledgement from AMA Auxiliary President

It was VOTED to receive as information, and with thanks, a letter from Mrs. Norman H. Gardner, East Hampton, in which she expressed appreciation to the Council for the gift presented to her (by the President, Dr. Spitz) on the occasion of her being installed as President of the AMA Auxiliary at Dallas, Texas during the annual convention of the AMA.

Reports on CSMS-Aetna Professional Liability Insurance Program

It was VOTED to receive as information four documents as follows: (a) An analysis of the CSMS-Aetna Program prepared by Mr. Howard T. Scherr, CPCU, of Princeton, N.J. Mr. Scherr was employed by the Society to make the analysis; (b) the fifth annual report on the Program submitted by the Aetna Life and Casualty Co.; (c) a statement on the Aetna's annual report by the State Insurance Department; and (d) a report on a joint review of the Aetna report made by the Committee on Professional Liability and Aetna representatives held on 8/12/76. The Council was joined by Mr. Pierce Enes and Mr. Frank Ginty of Aetna, both of whom commented on various parts of the fifth annual report on the Program and responded to questions asked by members of the Council. Following an extended period of discussion, the following actions were taken:

(a) It was VOTED to instruct the Committee on Professional Liability to continue negotiations with Aetna to develop a mechanism by which a physician who disagrees with the process of settling, or with the decision of Aetna to settle or defend, may make an appeal and/or register his dissatisfaction.

(b) It was VOTED to request of Aetna that, upon settlement of a claim, whether the physician agreed to settlement or not, the physician be notified in writing of the fact, date and terms of the settlement.

(c) It was VOTED to implement a suggestion of the Committee on Professional Liability that copies of the analysis of the Program prepared by Mr. Scherr be sent to the President of Aetna and the State Insurance Commissioner as information.

Follow-up Report on Defense Against FTC Complaint

It was VOTED to receive as information a report prepared by Staff, which, in brief, indicated that petitions for dismissal of the complaint (on grounds that no unit of organized medicine is a "business" within FTC definition) filed by AMA, CSMS and NHCMA have been denied, and that preparations are in progress to defend against the complaint at a hearing before an FTC judge in October. It appears likely that the scheduled hearing will be postponed, however.

Cumulative Minutes of Committee Meetings

It was VOTED to receive as information, and to transmit to the Journal Editor, the minutes of Committee meetings held as follows: Committee on Public Health—6/10/76; Liaison Committee with State Department of Social Services—5/13/76; Committee on Professional Liability—7/15/76; CSMS-CNA Joint Practice Committee—7/28/76; Committee on Organ and Tissue Transfers—7/28/76.

The minutes of the 5/13/76 meeting of the Liaison Committee with the State Department of Social Services were accompanied by a Department draft of proposed regulations to implement a "second opinion" requirement for certain medical and surgical procedures under the Medicaid program. Having carefully examined the proposed regulations, and discussed them at length, the Council VOTED that a letter be sent to the chairman of the subject Committee advising him of the following opinions of the Council: (a) That the proposed regulations will impose undue burdens on the time and energies of both the patient's attending physician and the chiefs of service of various hospital departments, and that the primary purpose of the regulations appears to be the validation of claims rather than to assure high quality care; (b) that, quite apart from the question of validating claims for payment, the time required for full compliance with the proposed regulations by a physician could result in depriving a patient of necessary treatment when it is *medically* indicated. (c) that the regulations reflect an unwarranted implication that inappropriateness of treatment on the part of physicians is the rule, rather than the exception, and that review by the Social Services Department is necessary despite the existence of peer review agencies such as hospital utilization review committees and PSROs; (d) that the prior imposition of regulations is in reverse order to the general conclusions of the U.S. Supreme Court on the abortion issue; i.e., "The decision vindicates the right of the physician to administer medical treatment according to his professional judgment up to the points where important state interests provide *compelling* justifications for intervention." . . . "*If* an individual practitioner abuses the privilege of exercising proper medical judgment, the usual remedies, judicial and intra-professional, are available."; and (e), that the Liaison Committee should not commit the Society to approval of any proposed regulations without prior consultation with the Council.

N.B. *The foregoing is a summary of the proceedings and actions of the Council on August 19, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

SPECIAL NOTICES

Yale University School of Medicine
Office of Regional Activities and Continuing Education
announces a multi-disciplinary course in
FETAL MATERNAL MEDICINE
at
Yale-New Haven Medical Center
under the direction of
Orvan W. Hess, M.D.

Courses in perinatal monitoring and perinatology will be conducted at the Memorial Unit of the Yale-New Haven Medical Center during the academic year. The purpose of the program is to up-date knowledge in the rapidly expanding field of Maternal-Fetal Medicine. The conference will be of interest to practitioners of obstetrics, pediatricians, nurses and others involved in perinatal care. The complete course will consist of a series of conferences held on three separate days: (i.e.

Day I	**Day II**	**Day III**
Nov. 9	**Nov. 16**	**Nov. 23**

The programs will include discussions on (1) Patho-physiology of FHR Activity/Pattern Recognition/Case Examples, (2) Antepartum evaluation/Oxytocin and non-stress tests—Value in Management, (3) Legal aspects of fetal monitoring, (4) Assessment of fetal development and pulmonary maturity, (5) Realtime ultrasonography, fetoscopy, echocardiography, (6) Vascular complications of toxemia, Coagulopathy, (7) Genetic counselling, (8) Infection in the newborn, (9) New approaches to cardiac disease in infants, and (10) Panel discussions, demonstrations of electronic apparatus and tours of the obstetrical and newborn intensive care units.

Faculty

Gerald Anderson, M.D., Vijaya V. Bapat, M.D., Richard Berkowitz, M.D., Ruth L. Breslin, A.C.S.W., Donald R. Coustan, M.D., Carol Christoffers, R.N., M.S.N., Debbie Fry, R.N., Jeryl Gagliardi, R.N., Ian Gross, M.D. Orvan W. Hess, M.D., John C. Hobbins, M.D., Charlotte Hood, R.N., Robert Hook, M.D., Anthony Iacovella, E.E., Nathan Kase, M.D., Marilyn Lapidus, R.N., Stanley R. Lavietes, M.D., Maurice Mahoney, M.D., Jane O'Kieffe, B.A., Cheng Hock Seah, M.D., Norman Talner, M.D., Robert Touloukian, M.D., Joseph Warshaw, M.D., Victoria Wirth, R.N.

For further information contact Program Chairman:
Orvan W. Hess, M.D.
Director Regional Perinatal Monitoring Program
Yale University School of Medicine
Office of Regional Activities and Continuing Education
5 Hope Building
333 Cedar Street
New Haven, Connecticut 06510
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The AMA Auxiliary—1976

The AMA Auxiliary has a proud history. We can say with authority what happened last year, ten years ago, fifty years ago. In this Bicentennial year even though our thoughts turn to history we still must be concerned with the present and with the future.

The effectiveness of an auxiliary approaching its 55th birthday depends on the dedication of its members. This, then more than anything, is why the everlasting need to shape the future should challenge the best we have in us.

There are now 90,000 Auxiliary members all across the country.

It is important that we stand united in support of our organization—county, state and national.

Why are we organized? Let us review the purposes of the AMA Auxiliary:

> To assist in those programs of the American Medical Association that improve the health and quality of life for all people;
>
> To promote health education;
>
> To encourage participation of volunteers in activities that meet health needs; and
>
> To support health related charitable endeavors.

Over the past few years I have shared with auxiliaries in 30 states either convention or workshop. I have listened intently to reports of your state chairmen and of your county leaders. Your efforts have produced many outstanding programs and projects for improvement of health.

I have seen proof over and over that one person can make a difference. Sometimes it was the president whose vision had inspired members to work together in a cooperative effort. Sometimes it was a dedicated member who worked faithfully to provide continuity in a worthwhile project.

One person made a difference in Connecticut as the Health Education chairman worked tirelessly to establish Medical Self Help classes which were open to all citizens. At the same time auxiliary members became qualified to teach the course which created a real ripple effect. One person did make a difference in Connecticut.

It is important that each Auxiliary consider its priorities for next year. We must decide where we are, where we want to go, and how we will get there. Only as we are unified in our directions will we achieve any results worth reporting next year.

What are our 1976 GOALS?

Let's unite to build a strengthened, unified membership.

Let's continue enthusiastic support of AMA-ERF—our commitment to medical education, and our only national fund raising effort.

Let's step up emphasis on legislation by supporting good medical legislation and by working against harmful legislation. Let's work in politics to put men favorable to medicine in Congress.

Let's communicate our worthwhile projects that benefit people to the public, to our own members and to the medical society.

There is a quotation which reads, "Do not follow where the path may lead. Go, instead, where there is no path and leave a trail." For those who are willing to chart new courses, there is an unlimited future.

The only way to start in the direction of improving our AMA Auxiliary is to start individually. In no other way can the Auxiliary gain in effectiveness this next year. So, my friends, let's unite to produce a memorable year that we will be proud to record in the history of the AMA Auxiliary.

Mrs. Norman H. Gardner, President
American Medical Association Auxiliary

PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Surgery (General): Wishes to return to the East. In or near New Haven or Hartford. Board Certified. Experienced, stable, 46 years old, married. Franklin Horowitz, M.D., 3145 Lama Avenue, Long Beach, CA 90808. (213) 430-7055.

Emergency Medicine or Industrial Medicine or Anesthesia: Connecticut license. Wishes to return from Ireland. Interested in Southern Connecticut or Westchester area. Board eligible in anesthesia. 45 years old, married. Resume on file at CSMS. Available January 1977.

Anesthesiology: Available now. Connecticut license. DARCS from London, England. F.A.C.A. 17 years experience. Instructor at Albert Einstein College of Medicine. 42 years old. Married. B.K. Basak, M.D., 64 Roundtree Drive, Plainview, NY 11803.

Dermatology: Board eligible. Available July 1977. Married. 27 years old. Interested in solo, group or associate practice. Residency at New York Medical College. M.D. from Downstate Medical Center, Write CSMS—B.B.K. Derm.

Dermatology: Available October 1977. Group or associate practice. Interested in Litchfield County. Presently at Geisinger Medical Center, Penna. Yale graduate. M.D. from University of Penna. Served in U.S. Army. 31 years old. Harry C. Stone, M.D., 202 Laura Drive, Danville, PA 17821.

Dermatology: Available now. Connecticut license. Presently full time Associate Professor of Dermatology at Temple University. 54 years old. Princeton undergraduate. Harvard M.D.; U.S. Navy. Alan D. Watson, M.D., 3322 N. Broad Street, Philadelphia, PA 19140.

Internal Medicine (Gastroenterology): Available August 1977. M.D. from St. Louis University. Internship and residency at Cornell. Fellowship at Strong Memorial, University of Rochester. Board eligible. Special interest in endoscopy. Contact W.M.B.—c/o CSMS.

Internal Medicine (Cardiology): Available July 1977. Connecticut license. Board certified. Completing fellowship at Waterbury Hospital. Desires group practice. Undergraduate degree from Penna. State. M.D. from Jefferson Medical College. Internship and residency at Thomas Jefferson University Hospital. Stuart M. Deglin, M.D., 4-C Staunton Road, Farmington, CT 06032. (203) 677-0132.

Internal Medicine (Cardiology): Available July 1977. Board certified. Desires group practice in medium sized community. Completing fellowship at University of Penna. Internship and residency at University of Michigan. Trained in echocardiography, vectorcardiography and CCU work. Nicholas H. Dienel, M.D., 625 Woodcrest Avenue, Ardmore, PA 19003.

Internal Medicine: Available July 1977. Board eligible. M.D. from Boston University. Residency at University Hospital in Florida. Group or associate practice. Daniel Dress, M.D., 5000 San Jose Blvd., #291, Jacksonville, FL 32207.

Internal Medicine (Gastroenterology): Available August 1977. Board certified. Fellow at George Washington University. Trained at Montefiore Medical Center. M.D. from George Washington University. Leonard D. Ehrlich, M.D., 2200 Columbia Pike, #1103, Arlington, VA 22204.

Internal Medicine (Gastroenterology): Board eligible. Desires straight GI or Internal Medicine in multispecialty group or partnership. Available July 1977. M.D. from University of Pittsburgh. All advanced training at Duke University Medical Center. Robert D. Fusco, M.D., 1416 Wyldewood Road, Durham, NC 27704.

Neurology: Board eligible in Internal Medicine and Neurology. Prefers group practice. M.D. from Temple. All other training at University Hospital of Cleveland. Extensive training in electromyography. 30 years old. Available July 1977. Robert W. Page, M.D., 3800 Parkdale Rd., Cleveland Hts., OH 44121.

OB/GYN: Board eligible. Available July 1977. Group or associate practice. 29 years old. M.D. from Albany Medical College. Internship and residency at University of Michigan Hospitals. Stephen M. Cohen, M.D., 2281 Glencoe Hills Drive, Ann Arbor, MI 48104.

OB/GYN: Board eligible. Connecticut license. Available July 1977. M.D. from New York Medical College. Residency and internship at Kings County Hospital in Brooklyn. Solo, group, or associate practice. 32 years old. William L. Scheiderman, M.D., 1655 Flatbush Avenue, Apt. A-1503, Brooklyn, NY 11210.

Ophthalmology: Board certified. Available July 1977. Associate, solo or group practice. M.D. from Albert Einstein College of Medicine. Residency at North Shore University Hospital (Cornell). Presently in U.S. Army. 30 years old. Married. Ira H. Asher, M.D., 5842 A. Brett Dr., Fort Knox, KY 40121.

Ophthalmology: Board certified. 2 years in the U.S. Navy Medical Corps. M.D. from Mount Sinai School of Medicine (AOA). Internship and residency at University of Michigan Medical Center. Edward Feinberg, M.D., 2819 Renfrew Avenue, Ann Arbor, MI 48105.

Ophthalmology: Available early summer of 1977. Board eligible in 1976. Completing fellowship at University of Tennessee. M.D. from Georgetown. Internship at French Medical Center in San Francisco. Residency at Case Western Reserve, Cleveland. 29 years old, married. Desires solo, group or associate practice. Complete resume on file. K.R.F.—Ophth. c/o CSMS.

Ophthalmology: Available June 1977. Board eligible. Diplomate of National Boards. B.A. from Columbia; M.D. from N.Y.U. Internship and residency at Montefiore-Einstein. 29 years old, married. Solo, group or associate practice. References available. Howard B. Goldman, M.D., 160 Cabrini Blvd. NY, NY 10033.

Ophthalmology: Board eligible. Connecticut license pending. Married to a dermatologist. 31 years old. M.D. from Downstate Medical Center. Internship and residency at Einstein and Montefiore Hospitals. Complete resume on file E.S.K.—Ophth. c/o CSMS.

Ophthalmology: Connecticut license. Board eligible. Wishes to return to CT in solo or group practice. Graduate of New Haven high school. B.A. from University of Pennsylvania; M.D., from Georgetown. Internship at Hartford Hospital; residency at Long Island Jewish-Queens Hospital Center and at Georgetown University. 2 years in the U.S. Army. 7 months at Walter Reed. Extra year of residency in N.Y.C. Available July 1977. Louis E. Mark, M.D., 2019 Windham Lane, Wheaton, MD 20902.

Ophthalmology: Board certified. Desires associate, solo or group practice in medium sized community. 31 years old. Completing active duty in U.S. Navy. B.A. from University of Chicago; M.D. from Jefferson Medical College; Internship at University of Penna.; Residency at Barnes Hospital, Washington University. Fellowship: Glaucoma, Wills Eye Hospital. Complete resume on file at CSMS. M.E.S.—Ophth.

Anesthesiology and Respiratory Therapy: Available now. Board eligible. Connecticut License. 49 years old. Presently in practice, but wishes to relocate. John A. Prescott, M.D., 45 Thacher Brook Circle, Attleboro, MA. 02703—Tel.: 617-222-6466.

Board Certified in Family Practice: To be Board Certified in Dermatology in November 1976. Connecticut license, 33 years old. Medium or large community. Solo, group or associate practice desired. Presently completing training at St. Joseph's Hospital in Chicago. Lawrence S. Krain, M.D., 5801 N. Sheridan Road, Chicago, Ill. 60660.

Family Medicine: Resumes are on file for seven physicians who will be available in summer of 1977 to establish practice in Connecticut. Contact CSMS.

Internal Medicine: (Gastroenterology) Board certified, 30, ABIM. Seeks partnership, group or hospital practice. Available now. Connecticut license.

Internal Medicine: (Nephrology) Board eligible. Seeks associate type practice. Completing training at Cleveland Clinic Foundation. Available now. Pierre Berthiaume, M.D., 3423 Elmwood, Cuyahoga Falls, O. 44221.

Internal Medicine: Part time position desired while completing a fellowship at Yale. Available evenings and week-ends. Covered office and clinic on a part time arrangement while in the service. 29 years old. References available. Connecticut license.

Internal Medicine: (Hematology) Connecticut license. Available now. 34 years old. Prefers institutional setting. FLEX. Board eligible.

Internal Medicine: (Cardiology) FLEX. Available now. Presently in practice. Trained at American University of Beirut and Peter Bent Brigham Hospital in Boston. Board eligible. 37 years old. Stephan Yenikomshian, M.D., 575 Pasadena Avenue, Owosso, MI. 48867.

Obstetrics/Gynecology: Available now. Board eligible. Presently in practice, but wishes to relocate in CT. Trained in Taiwan, Chicago and N.Y.C. 33 years old. Solo, group or associate practice. J.B. Hwang, M.D., 3990 Bronx Blvd., Bronx, NY. 10466.

Ophthalmology: Available now. Connecticut license. Board eligible. Presently in practice. 40 years old. Trained at NYU and Jewish Hospital of Brooklyn. Resume on file at CSMS.

Primary Care—Emergency Room: Part time position desired. Board eligible in psychiatry. Available immediately. Connecticut License. J.E. Millette, M.D., 968 Farmington Avenue, West Hartford, CT. 06107.

Surgery: General and traumatic. Available now. In practice. 52 years of age. Desires associate or institutional type practice. Luis A. Barranco, M.D., Throckmorton, Texas 76083.

Surgery: General and vascular. Available now. Board eligible. 34 years old. Presently with group in the midwest. Desires to move east to join small group. Contact CSMS.

Surgery: General. Available now. Board eligible. Group or associate practice desired. 33 years old. Trained at Univ. of Pittsburgh; USPHS and Cedars of Lebanon Hospital in California. Robert S. Weiner, M.D., 2012 Holly Vista Ave., Los Angeles, CA.

Primary Care—Occupational Physician: Desires short term position for October, November and possibly early 1977. Connecticut license. Wide variety of experience. William F. Ketchum, M.D., Apt. 1003, 419 Atkinson Drive, Honolulu, HA. 96814.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Emergency Room: Opportunity at the Johnson Memorial Hospital. Contact William A. Stoppani, Administrator, Stafford Springs, CT. Tel.: 203-684-4251.

Internist: Physician with interest in rehabilitative medicine needed in central Connecticut. Salaried position. Send CV to CSMS.

Pediatrician: Associate to join an active practice in northern Fairfield County. Excellent community and hospital resources. Contact CSMS.

Psychiatry: Two community hospitals presently in search for staff psychiatrists to implement special programs. Contact CSMS.

Army Medicine: At Cutler Army Hospital, Fort Devens, Massachusetts. Internal Medicine, General Medicine, Pediatrics, Anesthesia. For information contact CPT Peter D. Tremblay, Personnel Procurement Office. (617) 796-2004.

Emergency Room: As of August 1, 1976, six Connecticut Hospitals were in search of physicians to fill staff vacancies. Contact CSMS for listing.

Family Medicine: Opportunities in the Middlesex County area. Contact Malcolm Gorin, M.D., Middlesex Memorial Hospital, Middletown, CT. 06457.

Internist or Family Physician: Full time position at small psychiatric hospital and school. Albert Moss, M.D., Hall-Brooke Foundation, Westport, CT.

Occupational Medicine: Opportunities through the Connecticut State Department of Health. Contact Mr. J. J. Crowley, 79 Elm Street, Hartford, CT. 06115.

Obstetrics/Gynecology: Five opportunities are listed with CSMS.

Ophthalmology: Practice of a recently deceased physician. Contact Arthur Kaminsky, Esq., 158 Main Street, Putnam, CT. 06260.

Otolaryngology: Three opportunities listed through CSMS.

Surgery: (General) Solo practitioner seeking board certified or board eligible associate. Smaller community hospital. Attractive area conveniently located near larger medical center. Contact CSMS.

Surgery: General with thoracic surgery. Board certified or board eligible. Contact CSMS.

Internist: Full time staff. 84 bed hospital, mainly cancer care. University affiliation. Radiotherapy and Chemotherapy Clinic. $24,494 to $34,379. Fringe benefits. Harold W. Schell, M.D., Superintendent and Medical Director, Uncas on Thames Hospital, Norwich, CT. 06360.

Psychiatrist: Private practice in rural Connecticut. Well equipped community hospital. Initial subsidy available. Richard S. Dutton, M.D., 71 Spencer Street, Winsted, CT. 06098.

Internal Medicine: Part time (approximately 3 hrs./day). Monday through Friday. Innovative comprehensive alcohol treatment program. Contact: Paul Errera, M.D., Chief, Psychiatry Service, VA Hospital, West Haven, CT.

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The Office Management of Family Crises

Harvey L. Ruben, M.D., M.P.H.

Abstract—The general physician is in an enviable position. He has access to the entire family at an early stage in the development of many family crises. The author has developed a particular technique to help the family physician do meaningful family crisis intervention in the office setting. After determining high prognosis families for whom such intervention is appropriate, the physician is instructed in the various stages of brief family crisis intervention which can be completed in four to six office visits of a maximum of forty-five minutes each. Referral for more difficult cases is also discussed.

Mental Health professionals have developed sophisticated sociological techniques for diagnosing and treating pathology which develops within the family system.[1,2,3] With a minimal background in family systems and crisis intervention theory, the nonpsychiatrist physician should be able to assess a troubled family in his office and develop a reasonable treatment plan for the family which may or may not include referral. The general physician is in a unique position: he can perform meaningful and timely interventions in the crucial early stages of a crisis, frequently preventing the development of more chronic and deep-seated problems that require intensive psychiatric treatment.

To understand family crises, one must adopt a combined psychological, biological and sociological perspective of human behavior.[4] Crisis theory conceives of man as an organism attempting to maintain behavioral equilibrium.[5] Similarly, a family system can be viewed as a complex network of interdependent interactions among family members to fulfill basic needs and achieve equilibrium. A crisis is a state of emotional or physical disequilibrium during which the person or the family attempts to cope with a noxious stress by using a familiar behavior pattern or coping mechanism. If the crisis cannot be resolved, the person or the family's sense of turmoil intensifies. If a more effective coping pattern can be devised, the crisis and the turmoil are resolved, with a new equilibrium. This process can be equated with emotional growth and maturation. If the person or the family system is unable to develop an effective behavior pattern to deal with a crisis, maladaptive adjustments may thrust the person or the family system into a neurotic disequilibrium, or even cause the total disruption of the individual's personality or the family system. During this period of disequilibrium, the person or the family system is exquisitively sensitive and receptive to the interventions of the physician. Brief intervention at an early stage may yield rapid gains for the family.

What are the implications of this theory for the work of the busy generalist who may see as many as 40 to 50 patients a day between his office practice, house calls and hospital visits? The family physician is frequently the only medical professional to have access to the entire family. Patients with primarily emotional problems come to the family physician's office complaining of numerous physical ailments. With his familiarity and early access, the doctor often can diagnose a family crisis in its early phase, when there is the best prognosis. Based on his interaction with the entire family, the general physician can assume an unbiased and impartial role, both as a therapist and as a mediator. With least effort, he can prevent many family problems from developing into severe crises.

Because the physician has only limited time to devote to this endeavor, such interventions must be brief. Based on his background knowledge of the family, the physician is frequently able to help the family achieve partial or full resolution of a crisis within four to six office visits, using a maximum of 30 to 45 minutes a visit. A family requiring more intensive work is best referred to a mental health professional.

There are different types and degrees of family crises which are often related to the family configuration. The physician can determine the prognosis for a family by considering the type of crisis and the basic family configuration. Considering time constraints, the general physician should limit his interventions to high prognosis families.

Simplistically, the configuration of a family system can be characterized as basically stable or unstable. Stable family configurations usually have both parents present and are successful in fulfilling the eco-

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This is a revision of a paper presented at a Symposium on "Office Management of Mental Health Emergencies," American Medical Association Annual Meeting, Atlantic City, New Jersey, June 15, 1975.

nomic, physical, psychological, social and cultural needs of the family members. These families are more likely to maintain a permanent geographic location and to utilize the services of a particular family physician. Unstable family configurations frequently have one parent absent either actually or effectively. These families can be in any socioeconomic bracket, but they fail to fulfill the basic needs of the family members. They frequently have gross psychological or physical pathology in one or more family members. These families move frequently, so they rarely establish a lasting relationship with a physician. The physician's estimate of the family configuration will help to determine his treatment plan.

The type of stress must also be considered. The two basic types of stresses which disrupt the family system are internal and external stresses. External stresses are rarely under the control of the family members. They include natural disasters, accidents, physical illness, death or violent crimes such as rape, assault or homicide. Occupational and financial problems, geographical relocation and separation of family members through discord or for vocational purposes are also included. External stresses are quite disruptive to the family structure and readily identified in the office setting.

Internal stresses are either interpersonal conflict of the family members or individual psychopathological behavior by family members. Interpersonal conflicts include discord between parents, parent and children or siblings which may lead to physical abuse or even homicide. Individual psychopathology varies from personality disturbances (including alcohol and drug abuse or other anti-social behavior) to severe neurotic or psychotic illness with suicidal behavior. Internal stresses may not be readily viewed as family problems; they may be mistaken for problems affecting only particular family members. The physician's conception of these stresses and their dynamics will dictate his treatment plan and his ability to affect resolution of the crisis.

Considering the above, it is obvious that successful family crisis intervention is based both on the physician's skill and sensitivity, and also on the stability of the family configuration and the type of precipitating stress. Stable families usually have a broader range of coping skills and are more flexible and resourceful than unstable families. Thus, they experience less intense turmoil in times of crisis and are more receptive to interventions in the physician's office. Unstable families have a more difficult time mobilizing their coping resources and responding to the physician's endeavors. Likewise, crises which are precipitated by external stresses are also more easily handled by the general physician. Individual psychopathology is probably the most disruptive and difficult to deal with. The physician will frequently fail to identify this as a family problem, even though the "sick" member usually is acting out family symptoms. In these cases, intervention is usually necessary both with the family and with the individual.

The first step in managing a family crisis in the office is for the physician to recognize that the crisis affects the entire family, not just one or two members. In evaluating an individual, remember that emotional symptoms may be related to a broader family crisis. In such cases, the symptomatic patient is often healthier and possesses more ego strength than other family members. The asymptomatic family members may refuse to see that the sick dynamics of the family interaction include them.

The second step is to assess the entire situation as adequately and thoroughly as possible. A comfortable, quiet and private setting is necessary. Frequently physicians reserve a special section of their office for family consultation. Problems identified on a house call or in the hospital usually are best evaluated during an office visit, where a peaceful private atmosphere can be assured.

The physician must remain impartial and unbiased. To be therapeutically useful, you cannot consistently side with any particular family member. Even an honest family member is presenting the doctor with his or her own perception of the situation.

The physician must also be aware of his own personal feelings and identifications with or against particular family members. The doctor's own positive or negative feeling for the patient or the situation is called countertransference. If unrecognized, these feelings can undermine the doctor's effectiveness. It is an easy trap for us to identify with an abused wife, a stoic husband or seemingly helpless parents; but it is never beneficial for the family. Impartiality is critical for the family therapy to succeed.

The physician should willingly ask any and all pertinent questions. The more information he has, the more successful he will be. Demonstrating to the patient that you can be honest and direct about upsetting or difficult topics will promote this behavior in the sessions. Subjects obviously must be approached with tact. However, no patient ever committed suicide merely because the physician inquired about suicidal thoughts.

Crises are additive. When a family is in a crisis period, it is especially susceptible to additional difficulties caused by minor stress. Thus, the physician must continually check for new problems which might impede the therapy process.

Having adequately and impartially assessed the nature and severity of the family crisis, the physician must then become the "objective clarifier" of the situation. In other words, the doctor helps the family to define and understand the crisis situation. Each family member must understand his own role in the dysfunctional family interaction. Obviously, the ease of doing this varies with the nature of the crisis. A stable family frequently will need only definition and clarification of the crisis to resolve it. In other situations, especially where there has been the death or separation of a significant family member, the physician must assume a more supportive role. He may also have to help make decisions about the funeral and the family's functioning. Usually, stable families require no more than this.

Following definition and clarification of the crisis, the physician's role is that of a "consultant strategist." He must help the family develop and review—not dictate—possible alternative actions. The family itself must eventually choose the course of action. The doctor's objective stance can help to develop various strategies for the family.

The physician should be knowledgeable about various social agencies and community resources which can be mobilized to aid the family. It is quite appropriate for the physician to make personal interventions for the family with employers, ministers, or helping agencies, provided the family has requested him to do so. To do this without the family's permission would violate the confidentiality of the physician-patient relationship.

Once strategies have been developed and necessary personal interventions performed, more stable families can usually successfully resolve the crisis with minimal additional input. One or two more office visits to review the family's progress and make adjustments in the strategy usually suffice to complete the physician's involvement. The door should be left open for the family to return for future consultation if necessary.

The above discussion has dealt mainly with uncomplicated interventions for stable families—suitable high prognosis situations for family crisis intervention in the general physician's office. The more stable the family configuration and the less disrupted the family structure by internal or external stresses, the more likely the physician can help achieve resolution within the 30-45 minute, 4 to 6 visit limit. On the other hand, an unstable, highly disrupted family is often best served by referral to a mental health professional.

It may take several office visits for the physician to totally evaluate the situation and develop an appropriate disposition. The impartial questioning approach is the same whether treatment or referral is planned. If referral is contemplated, it is imperative that the family be properly prepared. Many families fail to accept a referral because they do not understand how or why this can help. The physician must convince the family that he is not rejecting them but rather that more specialized and intensive skills are required. He will, of course, continue to be their physician, and they may contact him at any time.

Once referral has been agreed to by the family, the doctor should personally contact the mental health professional to discuss the case. This will assure that the transition to the new therapist is effected without difficulty.

In conclusion, different family crises present to the general physician on almost a daily basis. If the foregoing principles are incorporated into the physician's handling of family crises, a high possibility for successful resolution exists whether or not the physician chooses to treat the family himself.

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Dr. Ruben is the author of C.I.: CRISIS INTERVENTION *(Popular Library, Oct. 1976), in which he discusses how to deal with all of life's crises.*

Complications of Tracheostomy and Their Prevention

Charles B. Beckman, M.D. and H.C. Stansel, Jr., M.D.

It is often stated that tracheostomy is a harmless procedure, but the review of any large series of tracheostomies will reveal that this is not completely true. There are many hazards to this procedure that require particular attention in keeping the complication rate as low as possible.

There are principally three indications for tracheostomy: 1) laryngeal or upper airway obstruction, 2) prolonged assisted ventilation and 3) tracheal toilet. Upper airway obstruction can be on a traumatic, neoplastic, or infectious basis. The requirement for prolonged assisted or controlled ventilation is much more common today with the advent of complicated operative procedures and for the more aggressive treatment of medical respiratory illnesses. We prefer not to leave in an endotracheal tube for more than five to seven days because of the traumatic injury to the larynx. The use of tracheostomy for the purposes of tracheal toilet provides ready access to tracheal-bronchial tree for suctioning and lavage. Minor disadvantages associated with the tracheostomy include the losses of humidification from the nasal passages, the glottic mechanism for coughing, and phonation. Each of these can be overcome and therefore, are not much of a deterrent when tracheostomy is indicated. The need for emergency tracheostomy is quite unusual with the advent of the endotracheal tube.

Complications of Tracheostomy

The complications of tracheostomy include intraoperative technical problems, postoperative subcutaneous and mediastinal emphysema, infection, accidental dislodgement of the tracheostomy tube with asphyxia, obstruction of the tracheostomy tube with secretions, hemorrhage, tracheo-esophageal fistula and stricture. These will now be individually dealt with.

During the performance of the tracheostomy, several hazards are present. The patient's neck veins become engorged if respiration is labored with the thyroid veins being particularly vulnerable to laceration and subsequent hemorrhage. For this reason, it is preferable to place an endo-tracheal tube first and during the performance of the dissection deep to the strap muscles, care must be taken to stay within the midline where there are relatively few vascular structures. Thyroid veins in the vicinity of the dissection should be carefully ligated prior to their division. Air embolization is another real danger of venous injury in the presence of labored respirations. Pneumothorax is a rare complication if dissection is maintained in the midline. Finally in the incision of the trachea, extreme care should be taken not to incise its posterior wall and the underlying esophagus, which might result in tracheo-esophageal fistula.

Subcutaneous and mediastinal emphysema are more often relieved by tracheostomy than exacerbated. However, if the skin incision is snuggly closed about the tracheostomy tube, emphysema is almost certain to occur particularly if the respirations are labored. Most surgeons recommend not placing any skin sutures to alleviate this problem. Infection is an unusual complication of tracheostomy, particularly when the skin incision is left open and free to drain. Frequent changes of tracheostomy dressings by the nursing staff and good stomal care will also lessen this complication. The outer cannula of the tracheostomy should be changed at least weekly, and more frequently, if necessary.

Dislodgement of the tracheostomy tube is usually a result of the strings being tied too loosely about the neck. These should be tightened until they indent the skin, thus holding the tube securely in place. If the tube becomes partially dislodged into the pretracheal space, this may result in asphyxia. For this reason, patients with tracheostomies should be under close observation by the nursing staff at all times. This will also prevent the rare occurrence of complete obstruction of the tracheostomy tube lumen with an inspissated mucous plug.

Hemorrhage secondary to tracheostomy can be of several categories. During the first few hours postoperatively, hemorrhage is usually of mild or moderate degree due to insufficient hemostasis during the procedure. The late hemorrhage, occurring one to four weeks following tracheostomy, can be of minor degree due to small tracheal mucosal ulcerations, but a high index of suspicion should be maintained for the dire complication of tracheo-innominate artery fistula. The innominate artery overlies the right and anterior portion of the trachea near the manubrium of the sternum and in some patients can be situated more superiorly than usual. Innominate artery fistulas have been described where the tracheostomy cuff has eroded through into the innominate artery, but more recently, Silen has focused attention on the low tracheostome at the fifth or sixth tracheal ring as a primary etiologic factor.[5] A low stoma can involve the

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innominate artery with inflammation and in his series, at least four of six fistulas were due to communication of the artery with the tracheal stoma itself. Prevention of tracheo-innominate artery fistula should be possible with two precautions. The incision in the trachea should never be below the fourth tracheal ring, preferably being located in the second and third rings. Following insertion of the tracheostomy tube, if unusual pulsations are seen making one suspicious that the cuff portion of the tube is in proximity and applying pressure to the artery, an attempt should be made to reduce the pulsation of the tube by using one of a different length or shape. Semi-flexible tubes are particularly useful in this situation with decannulation as soon as possible.

Tracheo-esophageal fistula is an unusual complication following tracheostomy. It can be the result of unusual positioning of the tracheostomy tube such that pressure is exerted posteriorly on the membranous trachea, or it can be the complication of prolonged, combined intubation with tracheal and naso-gastric tubes fixed on the spine resulting in pressure necrosis of the intervening tissue.

Stricture of the upper airway following tracheostomy can occur at numerous sites (see Figure 1). Subglottic stenosis above the site of the tracheostomy is often a severe complication of the tracheostomy being placed too high.[2] Tracheostomy through the first tracheal ring, the cricoid cartilage, or the cricothyroid membrane should never be done because this is the most narrow portion of the laryngo-tracheal airway. The tracheostomy tube, by simply rubbing against the lower edge of the cricoid cartilage, can produce sufficient inflammation within the subglottic tissues to result in stricture. If a stricture should develop in this area, successful resection is almost impossible because the cricoid ring is essential for stability of the larynx. This complication is avoided by placing the tracheal incision below the first tracheal ring.

With our awareness of the danger of high tracheostomy, strictures seen today are more likely to be located either directly at the stomal site or below at the level of the tracheostomy cuff. The incidence is approximately equal between these two sites, and the occurrence at both sites has increased considerably since the advent of the cuffed tube for positive pressure ventilation. Murphy has proposed that the cuff not only causes pressure necrosis of the mucosa in the immediate vicinity of the cuff, but also interferes with collateral circulation to the region of the stoma.[3] We feel that the stoma is more vulnerable due to pressure trauma from the tube being fixed to an adjacent respirator, aggravated by motion of the patient. Measures should be taken to try to minimize this type of trauma to the stoma by making flexible connections and keeping the patient adequately sedated.

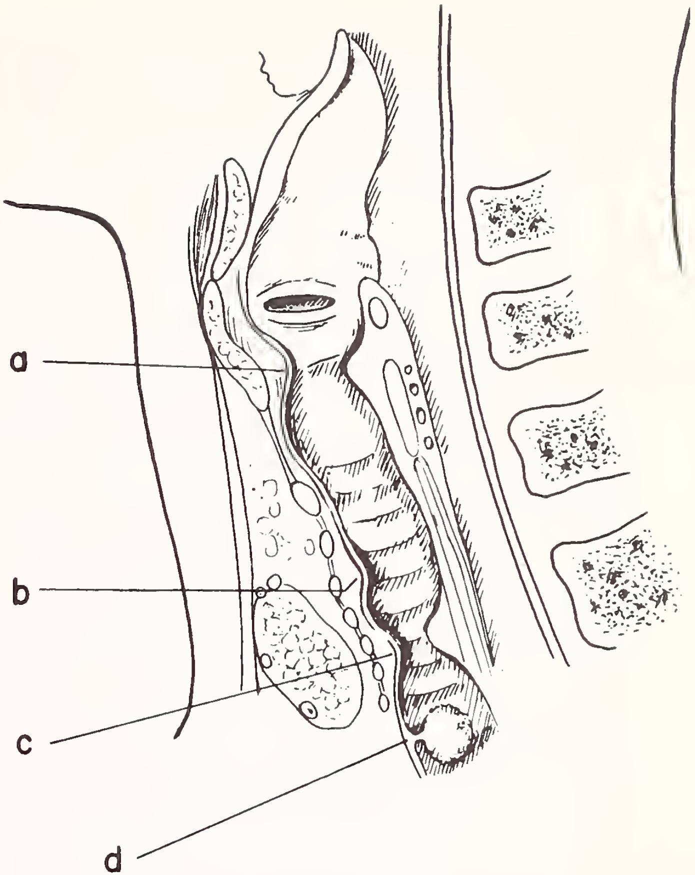

Figure 1

Common sites for stricture following tracheostomy.

a) Subglottic stricture (from tracheostomy site too high).
b) Stomal stricture (from excessive loss of cartilage or traumatic deformity).
c) Cuff site (pressure necrosis from hard cuff or motion).
d) End of tube (angulation of tube end against tracheal wall).

Technical factors in the creation of the tracheal incision also seem to be important in preventing stenosis at the stomal site. In adults, the creation of a window larger than 1 centimeter (the diameter of the tube) results in excessive loss of cartilage favoring inward collapse of the lateral walls with the removal of the tube. The use of a simple vertical incision in the adult, however, usually offers no real advantage over a moderately sized window because the pressure of the tube on the relatively stiff cartilage results in pressure necrosis of the cartilage in the immediate vicinity of the tube. Also, considerable care needs to be taken with the insertion of the tube to avoid invagination of the tracheal wall, resulting in permanent deformity of the cartilage with obstruction of the airway. In children, a simple vertical incision in the trachea is much preferable because pressure necrosis of the child's soft cartilage is less of a problem and conservation of as much cartilage as possible is essential in lessening the tendency for collapse of the soft cartilaginous structures following extubation.[6] If a simple vertical incision is made in either an adult or child, care should be taken during insertion of the tube to prevent infolding of the tracheal wall by placing non-absorbable traction sutures on either side of the incision, brought out through the wound. These traction sutures also facilitate postoperative tube changes.

The other common site of stricture, at the tracheostomy cuff site, is best prevented by a low pressure large volume cuff as designed by Grillo.[1] Nursing care maneuvers to prevent stenosis at this site, such as frequent deflation of the cuff to re-establish mucosal flow and inflation of the cuff to barely occlusive pressures, are of considerable help. However, the new soft cuff with a cylindrical outer shape appears to be the most important preventive measure.

An unusual complication of tracheostomy recently reported by Sasaki is vocal cord fusion. Sasaki has found that an open tracheostomy reduces airway resistance to such an extent that vocal cord abduction ceases to occur. The cords remain relaxed in the midline.[4] If the airway resistance is increased by a partially occluding plug in the tracheostomy, cricoarytenoid activity can thus be regained, but this takes varying periods of time depending on the duration of the tracheostomy. If an endotracheal tube has been in place prior to the tracheostomy, the vocal cords will frequently be denuded of epithelium such that prolonged relaxation of the cords in the midline may result in their actual fusion. Perhaps the prevention of this complication will be through the addition of an appropriate resistance attachment to the tracheostomy tube during spontaneous ventilation so that some cricoarytenoid muscle abduction activity is preserved. This acquired weakness of the cricoarytenoid muscles may also be the explanation for the frequent difficulty in weaning young children from tracheostomies.

Summary of Technique

For the performance of tracheostomy we advocate preliminary passage of an endo-tracheal tube whenever possible. Use of the operating room with optimal lighting, cautery and suction is of definite advantage. The neck should be hyper-extended by placing a sandbag beneath the shoulders in order that the trachea is brought up and forward. With local anesthesia, either a transverse or longitudinal skin incision can be made. The longitudinal incision, although less cosmetic, is preferred for difficult situations. Once the deep facia is reached, the dissection should be kept strictly within the midline between the strap muscles and down to the trachea to avoid the major vascular structures. The thyroid isthmus should be divided between ligatures if its presence is likely to obscure the stomal site. In adults, we recommend making a window 1 centimeter in diameter to conform to the tube size by cutting segments of cartilage from the second and third rings anteriorly (See Figure 2). A tracheal hook retractor provides assistance during this procedure. In infants, we recommend a midline incision through the second and third ring after placing stay sutures of non-absorbable material on either side of the proposed incision. A tube of proper curve and length to fit the trachea without unusual angulation and pressure should be selected. The cuff should be soft, large volume type. After the tube has been tied in tightly, it should be checked such that dislodgement cannot occur. The skin incision should be left opened and a postoperative x-ray obtained to be certain that the tube does not impinge on the carina and that there is no pneumothorax. Postoperative care should include adequate humidification of inspired air, aseptic technique during gentle suctioning, and the cuff should be inflated until it is just occlusive if the patient is on a respirator. Periodic deflation of the cuff is desireable and measures should be taken to prevent unusual tube movement within the trachea. Nasogastric tubes should be avoided if at all possible. A tracheostomy set should be kept at the bedside in the event that accidental decannulation should occur in order that a new tube can be carefully inserted without insulting the tracheal wall or causing a pretracheal dissection.

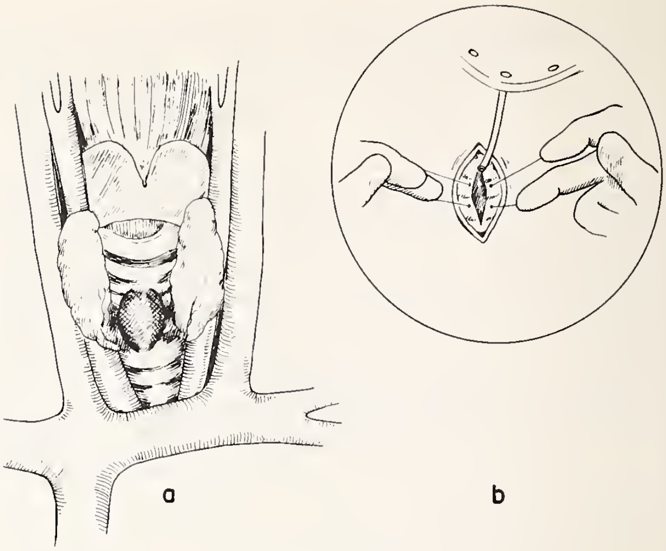

Figure 2

a) Adult tracheostomy. A portion of the second and third tracheal cartilages is excised with the creation of a window. Note the proximity of the innominate artery to the midline at the level of the fifth or sixth ring. If the stoma is made at this level, there can be an inflammatory reaction involving the artery predisposing to tracheo-innominate artery fistula.

b) Child's tracheostomy. A slit rather than a window is created in the child. Due to the greater flexibility of the cartilages, preservation of all cartilage is important in preventing collapse of the trachea after decannulation. Note the use of traction sutures to facilitate nontraumatic insertion of tube.

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Clinical Use of Narcotics

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Abstract—Narcotics are useful drugs as adjuncts in anesthesia and for the relief of pain in the postsurgical period. They are not anesthetic in the true sense and cannot be used as the sole agents for surgical anesthesia. Because the deleterious effects on the circulatory system are minimal, they have been used extensively in recent years for cardiac surgery in conjunction with other agents that produce amnesia and cause loss of reflex activity.

Recently, the term "neurolept analgesia" has been popularized by certain anesthesiologists. This is obtained by using a combination of a narcotic and a psychosedative, such as one of the phenothiazines or a butyrophenone such as droperidol. A fixed-ratio combination of fentanyl, a potent narcotic, and droperidol has been widely promoted as the sole agents for anesthetic procedures (Innovar).

The duration of action of fentanyl is less than an hour; the duration of action of droperidol may last five, six, or seven hours depending on the individual. Many who use this combination think it is a single-entity compound and often refer to the sedation and analgesia which is obtained as "Innovar anesthesia." Cardiac arrests have occurred due to respiratory depression. Spasticity of the thoracic muscles caused by the fentanyl, and hypotension due to overdosage of droperidol when the drug has been used in successive increments throughout a surgical procedure have occurred. The misconception that this is a simple and relatively safe mixture is widespread, and many of these accidents have resulted from the assumption that this mixture is innocuous and can be used with impunity. The dosage of each for a given patient should be estimated and administered initially, after which analgesia is obtained, with increments of the fentanyl. A single dose of droperidol generally suffices. Anesthesia may be completed by supplementing the combination with nitrous oxide, halothane, or some other inhalation anesthetic. The term "neurolept analgesia" does not describe any particular pharmacologic state, but merely refers to the amnesia and analgesia that is obtained with the combination of a narcotic with a psychosedative, or several drugs of similar actions. Other safer combinations are available than the droperidol-fentanyl mixture in a fixed ratio.

Characteristics of Analgesics

Analgesics are classified as "mild" or "strong."[1] Strong analgesics, with the exception of certain psychosedatives in the phenothiazine group, the most prominent of which is promethazine (Levoprome), are narcotics. Narcotics produce euphoria, cause development of tolerance, psychic and physical dependence. They not only elevate the pain threshold, but they also modify the emotional and psychological response to pain.[1, 11] Phenothiazines act by modifying the psychologic responses to pain. They do not produce tolerance and physical dependence. Mild analgesics, also referred to as "non-narcotic analgesics," modify the pain process locally or elevate the pain threshold, or they do both.[13] They do not produce euphoria or cause development of tolerance, psychic or physical dependence, nor do they alter the emotional response to pain or relieve anxiety.

Until meperidine (Demerol) was synthesized in 1939, all available narcotics were alkaloids or derivatives of alkaloids obtained from opium. The two most abundant opium alkaloids are morphine and codeine. Narcotics contain tertiary amino groups and are therefore bases, and alkaline.[2] They are poorly ionized, lipid soluble, and readily penetrate the cell membranes. For this reason they are active physiolog-

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ically in small doses. Narcotics form salts with acids. The salts are ionized and not lipid soluble, but at the pH of the blood are converted to the unionized base and readily penetrate lipid cellular barriers.[2, 13]

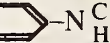
Morphine (isolated by Serturner in 1803) is the prototype of all narcotics.[1] Narcotics are qualitatively similar in their pharmacologic action, but the modifications of the molecular structure of each makes them quantitatively different. Narcotics act in a heterogeneous manner; that is, they depress some and stimulate other areas of the nervous system. The analgesic effects of morphine and other narcotics cannot be separated from the hypnotic, sedative and psychologic effects.[18]

Chemical Differences

Narcotics fall into five chemical groups:[1, 2, 13] one, those derived from phenanthrene. These include morphine and codeine and the synthetic derivatives of these, such as dihydromorphone (Dilaudid), heroin (diacetyl morphine), oxymorphone (Numorphan), and metapon. Since these are semi-synthetic opium derivatives, they are often referred to as opioids. A second group, the morphinan derivatives, are also derived from phenanthrene; however, they are synthetic and are not of botanical origin. Levodromoran is the most important derivative of this group. A third group is derived from piperidine. The first of these to be prepared was meperidine (Demerol). In recent years other piperidine derivatives such as alphaprodine (Nisentil), anileridine (Leritine), priminodine (Alvodine), and fentanyl have been synthesized and introduced into clinical medicine. A fourth group consists of compounds derived from a diphenyl heptane chain. The most prominent of these are methadone, isomethadone, methadol, and the mild analgesic propoxyphene (Darvon). A fifth group is derived from benzmorphan. Among these are phenazocine (Prinadol), which has fallen into disuse, and the mild narcotic pentazocine (Talwin).

Non-narcotic analgesics are chemically different from the narcotics. Some are derivatives of salicylic acid (aspirin) and its analogs, aniline (acetanelid), acetophenetidin (phenacetin), pyrazole and pryazolone (aminopyrine, phenylbutazone). Some drugs act centrally at the internuncial neurons and allegedly relax muscles, thereby relieving pain due to spasm (mephanesin, meprobamate, diazepam). Some pharmacologists include them among the analgesics.[1, 8]

Structure Activity Relationship of Narcotics

The qualitative similarity of narcotics is due to a particular chemical configuration that can be consistently identified in their structures.[2, 13] The group is responsible for the narcotic activity. It consists of a tertiary nitrogen atom bearing the methyl group (CH3) or a chain of several carbon atoms, with a benzine ring and an amino group (–C––$\mathrm{N}^{\mathrm{CH3}}_{\mathrm{H}}$). The tertiary nitrogen atom is connected to a dimethylene chain (two carbon atoms (—CH2—CH2)-), which is then connected to an electrophilic, negatively charged fixed carbon atom. This carbon atom bears an aromatic nucleus (a benzine ring (R—$\overset{|}{\underset{|}{\mathrm{C}}}$—). Attached to this carbon atom are one or more carbon atoms which bear an oxygen atom. The oxygen atom is either a ketone (—C=) or hydroxyl (OH) group. This particular configuration is mirrored in all the narcotics now in use except fentanyl. The quantitative differences between narcotics are due to the presence of other side chains or chemical groups on the molecule. Some narcotics have additional groupings that confer other pharmacologic properties to the molecule. Meperidine, for example, also has mirrored within its structure the grouping responsible for local anesthetic activity. Meperidine applied to the tip of the tongue produces numbness. Ethyl morphine (Dionin) does likewise.

This chemical grouping conferring narcotic activity fits into a specific receptor site on the cells susceptible to these drugs. The nitrogen atom, which is positively charged, fits into a depression which bears a negative charge.[1, 13] The benzine ring adheres to a flat surface on the receptor site between another depression which is positively charged. The positively charged depression site attracts the negatively charged electrophilic carbon atoms by the so-called van der Waals' forces of electronic attraction. An aromatic nucleus, a dimethylene chain and a tertiary nitrogen atom, to which is attached a methyl group or a modification of the methyl group, as heretofore described, appears to be necessary for a compound to manifest narcotic activity.

Qualitative Similarity of Narcotics

Analgesic doses of most narcotics produce sleep, from which one can be aroused and awakened refreshed.[18] Progressively increasing the dose produces deep sleep, stupor, and then coma. Therapeutic doses of narcotics alter the electroencephalogramic pattern little or not at all. The tracing appears to be similar to that observed in normal sleep. The temperature regulating center is not affected unless doses that cause coma are administered. The vasomotor center is depressed by greater than analgesic doses and hypotension may result.[1, 11] The vomiting center likewise may be stimulated and vomiting may result, primarily from its action on the chemoreceptor zone. Vomiting may also result from stimulation of the vestibular nuclei. In addition, the vasomotor centers responsible for maintaining the tone of vessels and a normal blood pressure during postural changes may be depressed and hypotension results. This induces vomiting, presumably due to the cerebral anemia. This occurs when subjects who have been given narcotics are permitted to ambulate. Narcotics are spasmogenic to visceral smooth muscle and may cause hypermotility of the bowel, which in some subjects induces nausea and vomiting.[1, 11]

Cerebral Effects of Narcotics

The effects of morphine on the brain are comparable to transection at the corticothalamic tracts.[18] Large doses cause convulsions by stimulating subcortical nuclei and possibly the spinal cord. Pain is obtunded by doses that exert their effects primarily on the brain. Intracranial pressure is usually increased by narcotics and the arterial carbon dioxide tension (pa CO_2) is elevated if respiratory depression occurs. Stimulation of the nuclei controlling the third nerve causes miosis. Stimulation of the vagus center may occur with some narcotics, resulting in bradycardia, but this is uncommon when analgesic doses are administered.[8]

Morphine and other narcotics tend to decrease the time sense and cause a dreamless sleep with no amnesia when used alone. They alter the psychic response to pain.[1] The subject may feel the pain but is indifferent to its presence. For this reason they are also able to relieve anxiety and this makes them useful for preanesthetic sedation. The motor areas are generally not affected by analgesic doses, but ataxia and lack of coordination may result from the use of greater than analgesic doses. Memory for recent events is impaired but the perception of the environment and will are unaffected. Doses that induce coma abolish all pain and reflex activity. Analgesic doses obtund dull pain but have little effect on sharp pain, such as that experienced during surgical instrumentation. The pharmacologic decerebration that occurs when large doses are administered causes loss of cortical control of the remainder of the central nervous system.[1, 18]

Effects on Respiration

Narcotics depress respiration. They may increase the rate and decrease the depth or decrease the rate and increase the depth. In any event, the minute volume exchange is decreased and suboxygenation invariably results. The sensitivity of the chemoreceptors on the surface of the medulla to carbon dioxide is diminished. The carotid body remains active in cases of overdosage and reflexly maintains the respiratory drive. Should oxygen be administered under these circumstances, apnea results due to the removal of this anoxic stimulus.[1] Respiration then must be assisted with oxygen, and not room air, because suboxygenation and cerebral damage may occur. Since the medullary chemoreceptors are inactive, carbon dioxide is not only ineffective in stimulating respiration, but may actually enhance the respiratory and metabolic acidosis accompanying overdosage. Narcotics relieve the sensation of dyspnea by acting centrally on the cortical receptors for stimuli mediated by the vagi that arise from the "wet lung" in patients in heart failure. Large doses of narcotics cause Cheyne-Stokes respiration.

Cardiovascular Effects

Morphine has no significant effect on cardiac output.[3, 4, 16] The depression of the myocardium is less with morphine than with meperidine or fentanyl.[16] The heart rate is usually not affected but it may be decreased in apprehensive patients with tachycardia, due to relief of anxiety. On the other hand, it may be increased if nausea or vomiting occurs. The blood pressure is usually unchanged by analgesic doses but decreased by large doses due to depression of the vasomotor center if respiration is depressed. Blood pressure may be elevated by large doses, due to release of epinephrine and norepinephrine.[4, 17] This may occur when morphine is used in exceptionally large doses for surgical anesthesia for open heart surgery. The skin vessels dilate, presumably due to histamine release. Narcotics have no direct effect on the cerebral circulation.[18]

Metabolic and Other Effects

Narcotics may cause hyperglycemia, particularly if they cause respiratory depression. Oxygen consumption is decreased due to a reduction in the metabolic rate. Morphine and certain other narcotics release the antidiuretic hormone and cause oliguria.[1, 6] Liver function is slightly reduced, particularly if respiratory depression occurs.[1] This is noted primarily if the excretion of bromsulphthalein is of short duration and is not of serious consequence. Glycogen may be depleted due to the release of norepinephrine.[1]

Absorption and Excretion

Morphine depletes the adrenal gland of catecholamines when large doses are used.[1, 17] Visceral smooth muscle tone is increased to the point that spasm may occur.[13] Morphine and other narcotics have no appreciable effect on vascular smooth muscle.[12] Morphine behaves, at times, as a parasympathetic mimetic. This action may be enhanced by parasympathetic stimulants such as neostigmine.[1] Gastrointestinal motility is increased. Conduction along the peripheral nerves is not affected by narcotics. Narcotics cause a decrease of salivation and some increase in bronchiolar tone. Narcotics may cause bronchospasm in asthmatics. All narcotics pass the placental barrier with ease and affect the fetus if given just before delivery.[1]

The urinary output is decreased, not only from release of the antidiuretic hormone, but also from a decrease in the rate of glomerular filtration. Narcotics may cause spasm of the sphincter of the bladder and ureters.[8]

Morphine and other narcotics are detoxified by the liver. Five to seven percent of a therapeutic dose of morphine is eliminated unchanged. Ninety percent of a therapeutic dose is conjugated with glucuronic acid and the by-product excreted into the urine within 24 to 36 hours. Narcotics are stored in highly perfused capillary rich tissues at first and then redistributed to other tissues, particularly the muscles. An intravenous dose of morphine disappears from the blood within ten to thirty minutes. Traces appear in the urine, feces, gastrointentinal contents, the bile, and sweat.

Generally, when morphine is administered intramuscularly, the peak analgesic effect is attained within one and one-half hours; when given intravenously, within twenty minutes.[1] Some narcotics are longer acting than others. The opioids appear to be the longer acting.[1, 2] Most narcotics are absorbed from the gastrointestinal tract but absorption may be erratic if they are ionized when the pH is less than 7.0, in which case they do not easily penetrate lipid cellular barriers. All narcotics, as a rule, are active antitussives.[1, 2]

Attitudes Towards Narcotics

After World War II, a number of prominent anesthesiologists waged a campaign against the use of narcotics in anesthesia and surgical practice, claiming that they were unnecessary for premedication or for relief of postoperative pain and caused serious adverse effects that increased postoperative morbidity.[8] Many anesthesiologists and surgeons did not share these views and continued to use them for both pain relief and preanesthetic medication, as had been done for decades. Within the past decade there has been a remarkable reversal in attitude towards narcotics and some anesthetists have, in essence, "rediscovered" morphine. They are now aware that it, as well as other narcotics, are indeed valuable drugs and necessary in the practice of medicine. The difficulties in finding an anesthetic that does not seriously impede cardiac output and coronary blood flow in "bypass" and other cardiovascular procedures led some anesthesiologists to explore the use of morphine in combination with nitrous oxide and other adjunctive drugs for this type of surgery.[9] Of the narcotics studied for cardiac surgery, morphine has been found to cause the least reduction in cardiac output and blood flow. Since then, morphine has become one of the most widely used basal agents for open heart surgery.[10]

"Morphine Anesthesia"

The advantages of morphine are that it provides cardiovascular stability during induction and maintenance of anesthesia. Analgesia persists well into the postoperative period. Since the doses used are far greater than were used heretofore for analgesia and cause apnea or marked respiratory depression, respiration must be assisted or controlled with a ventilator during the immediate postoperative period. Doses exceeding 500 mgm. over a five or six hour period have been used. Obviously this causes respiratory depression but in some cases this is desirable because artificial ventilation is also indicated postoperatively and the narcotic facilitates the use of mechanical ventilators.[3, 5]

Although certain advantages are now recognized in using large doses, it must be emphasized that some serious disadvantages exist also.[10, 14] Postoperative psychosis may occur after the third or fourth day. This is considered by some to be a manifestation of acute withdrawal.[1] An amnesic agent must be used in conjunction with the narcotic such as diazepam (Valium); otherwise, patients recall events occurring during operation.[3] Nitrous oxide is necessary to reinforce the analgesia. Considerable norepinephrine release results from the use of large doses and an alarming elevation in blood pressure occurs. This may be corrected by using a vasodilating agent concomitantly. Some anesthesiologists use intravenous alcohol for this purpose; others use peripheral vasodilators. Antidiuresis due to the release of the antidiuretic hormone is another vexing complication. Muscular twitchings may also occur.[17] Presumably this is due to the stimulation of the cerebral motor areas, an effect that is not ordinarily observed with usual analgesic doses. "Morphine anesthesia" is not as well suited for children as it is for adults. The majority of patients undergoing open heart surgery for coronary artery disease are in the upper age group. The use of morphine with adjunctive drugs seems to be well suited for these subjects. Muscle relaxants are used to prevent reflex movements since the narcotic is not a "complete anesthetic."

Cross-Tolerance and Dependency

Although narcotics are qualitatively similar but quantitatively different, presumably they all act at the same receptor sites.[18] They cause both psychic and physical dependence. Withdrawal syndromes are identical with different chemical types of narcotics. Narcotics are antagonized by dissimilar types of antinarcotics. In other words, nalorphine (Nalline), which is derived from morphine, is as effective in reversing the meperidine type of narcotic as it is for a benzmorphan derivative, phenanthrene, or a methadone type and they can be interchanged in tolerant and dependent patients. A cross-tolerance likewise exists between all narcotics. Physical dependence too mild to detect is alleged to develop with a single dose. This is not readily discernible and should not preclude their use for two or three days after an operation. If an analgesic dose is administered every four to six hours for approximately ten days it causes well defined physical dependence.[18]

"Neurolept Analgesia"

During the past decade the term "neurolept analgesia" has been popularized by certain enthusiastic anesthesiologists. The uninformed believe that a new phenomenon has been discovered in neuropharmacology. The terms "neurolept anesthesia" and "neurolept analgesia" are as old as anesthesia itself. In 1846 Oliver Wendell Holmes was asked to coin a name for the narcosis induced by ether. He said, "The state, I think, should be called anesthesia. This signifies insensibility to objects of touch. The words, antineuritic, aneuritic, neuroleptic, neurolepsia, neurostatis, seem to be anatomical, whereas the change is a physiological one."

In present day writings, neurolept analgesia is defined as a general state of quiescence, reduced motor activity and a reduced response to tactile, auditory and painful stimuli. It may or may not be accompanied by amnesia. Morphine combined with scopolamine relieves anxiety and produces quiescence and amnesia.[1] Various mixtures of newer psychosedatives and narcotics have been introduced that produce such a state. These mixtures have been promoted to such a degree that erroneous impressions have been created. Presently, one of the most popular mixtures that has been heavily promoted is a combination of droperidol and fentanyl in a fixed ratio of 50 to 1, bearing the trademark Innovar.[16] The mixture has been promoted as a "premedicating" agent, for "induction" and for "maintenance." Although the literature does not state that it is an anesthetic, one infers from the claims made that it is.[19] Various misconceptions prevail concerning this mixture. Some physicians do not realize that it is a mixture and regard it as a single entity compound. The promotional literature advocates its use as a sole anesthetic agent for certain surgical procedures when indeed it is not an anesthetic and should be recommended only as an adjunct to anesthesia.

Fentanyl is a narcotic derived from piperidine.[19] It is pharmacologically similar to morphine except that it is 100 to 150 times more potent on a weight basis. Its onset of action is rapid, ranging from one to three minutes, and the duration of analgesia is short, ranging from three-fourths of an hour to one hour when administered parenterally. Emesis is uncommon. Its effects are not augmented by monamine oxidase inhibitors, as is the case with meperidine. Unlike other narcotics, fentanyl has several objectionable features. It causes a rigidity of the muscles, particularly those of the thorax, of unknown etiology.[19] This can be relieved by the use of muscle relaxants or reversed by antinarcotics. Failure to promptly do so has resulted in asphyxia when the drug has been used for premedication in a patient's room. This is a hazard that must be borne in mind when it is ordered for preanesthetic medication, and one must be prepared to overcome this complication. Fentanyl, as is the case with other narcotics, causes respiratory depression that outlasts the analgesia. Fentanyl causes bradycarcia and other cholinergic effects which are antagonized by the use of anticholinergics, such as atropine.[19] It may, by itself, cause hypotension. It decreases cardiac output to a greater degree than morphine. Many who use narcotics for anesthesia for cardiac surgery feel that morphine is the superior of the two. It may cause hallucinatory effects and dysphoria. It has additive properties with other narcotics, or summation, with other central nervous system depressants.[19]

Droperidol is a butyrophenone whose pharmacological properties are similar to the phenothiazines. Droperidol has no effect on respiration or on myocardial contractual force rate, cardiac output, and no changes in the electrocardiogram or electroencephalogram.[19] It causes some degree of alpha adrenergic blockade, which may cause a hypotension, particularly in patients with hypovolemia and those who are "poor risks." Combined with fentanyl or other narcotics it produces amnesia. Unlike fentanyl, its duration of action may last six or seven hours. If the mixture of the two is given in repeated increments, as is frequently advocated, an overdose of droperidol may be given. Fentanyl alone should be used in increments for additional analgesia after the administration of the initial dose of the mixture (Innovar). Droperidol may produce Parkinson-like symptoms in the postoperative period. It does not produce muscle relaxation.

Complications of Neurolept Analgesia

Various complications have been reported from the use of Innovar. Cases of cardiac arrest followed by death or cerebral injury have resulted. Although the majority of these cases have been due to the improper use of the mixture, improper monitoring or nonchalance due to misconceptions gained from zealous over-promotion, unfortunately, the mixture has been promoted as a drug which is simple to use and superior to other mixtures of central nervous system depressants. The mixture has been expected to do a task that it is not capable of doing; namely, that of being an anesthetic. It is not an anesthetic and is no more so than a mixture of morphine and scopolamine. It should be used as a basal narcotic and be supplemented with nitrous oxide, halothane or other inhalation anesthetics. Continuous intravenous infusion over a prolonged period of time has also led to overdosage of droperidol. One of the greatest objections to the mixture is that no two individuals respond in the same way to a mixture of drugs in a fixed ratio. Some respond to a greater degree to the fentanyl; others to the droperidol. The proper way to use the two drugs is to judge the dose of each drug for an individual and administer them separately as needed. As a rule, the administration of one dose of the psychosedative is sufficient during a surgical procedure. Increments of fentanyl are added if the analgesic effects recede or those of nitrous oxide are not adequate to afford the desired pain relief.

The side effects of droperidol are overcome by anti-Parkinsonsim agents and vasopressors of the musculotropic type (angiotensin). A notation should be made on the patient's record to alert recovery room nurses when this mixture has been used during a surgical procedure because the addition of other narcotics in the recovery room may cause severe respiratory depression, apnea and hypotension.

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Hemorrhoidectomy Without Urinary Retention and Catheterization

Joseph A. Scoma, M.D.

Anorectal disease will affect one of every three Americans some time during their adult lives. Despite the common useage of salves, suppositories, ointments, laxatives and stool softeners, anorectal surgery in particular hemorrhoidectomy remains one of the most common types of operations performed in the United States. The complications of anorectal surgery include hemorrhage, stenosis, unhealed wounds, fistulas, incontinence, sepsis with abscess formation, and fecal impaction. Urinary retention is certainly a complication, but is so common that it is rarely listed as a postoperative problem, barely mentioned in the literature.[3,5] Salvati stated that urinary retention is the most common postoperative complication.[8,9]

Even in the hands of trained proctologists the rate of catheterization remains surprisingly high. With this in mind a program was established to safely abolish this common postoperative complication.

Methods

The charts of 100 patients undergoing hemorrhoidectomy by trained surgeons and proctologists, including the author prior to the onset of this present study, were gathered for comparison (Group I). A second group of 100 consecutive hemorrhoidectomies performed by the author under the present regimen were also gathered. (Group II). For purposes of this study only patients undergoing primarily a hemorrhoidectomy were evaluated, thus excluding fistulectomy, fissurectomy, anoplasty, excision of rectal tumors, and the repair of procidentia.

Except when performed by the author, all cases were done under some form of spinal anesthesia. Patients in group I were catheterized mainly at the discretion of the nurse and occurred mainly during the night shift. An objective evaluation of why or when the patient was catheterized is virtually impossible from the nurses' notes since factors such as pain were not clearly distinguished from the pain of urinary retention, nor was distention found to be of any objective value in the judgment of the nursing staff.

In group II all surgery was performed under local anesthesia using the long acting anesthetic agent, bupivacaine, with epinephrine and hyaluronidase. No patients received atropine or scopalamine. The anesthesiologist was asked to give intravenous valium with small doses of pentathol, if necessary, at the beginning of the local infiltration. Intraoperative fluids were limited to 200 c.c. and the infusion was terminated as the dressings were being applied loosely. A standard Buie type clamp and dissection hemorrhoidectomy was performed on all patients, but all wounds were closed.[1]

Postoperatively, the patients were given 100 mg. of Demerol intramuscularly four hours after surgery was completed and every two hours thereafter as needed. Patients were carefully instructed to take only sips of water and hard candy until they voided. Water pitchers were removed from the bedside. Nurses were instructed to catheterize the patients only after having received the author's approval. Furthermore, they were instructed not to urge the patients to void. The morning following surgery, the patients were placed in a hot bath and encouraged to void if they had not already done so. Those who did not void in the bath were immediately placed in a hot shower.

Results

In group I, 52% of the patients were catheterized. The catheterization rate for trained proctologists was 40%. The incidence of repeat catheterizations was 18%. Most patients who were catheterized were discharged on antibiotics, sulfa preparations being the most commonly prescribed. The incidence of post-catheterization urinary tract infection and urethral injuries is impossible to determine from the hospital records. (Figure 1)

Incidence of Catheterization

Group I	52%
Group II	0%

Figure 1

In group II no patients were catheterized. (Figure 1) Eighty six per cent of the patients voided prior to being placed in a hot bath the morning following surgery, while the remaining patients voided in the bath or shower. Nurses' notes when available were carefully examined and the patient questioned to determine if the patient should have been catheterized.

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None of the patients in this group asked for catheterization nor did any complain of bladder distention. On close questioning the patients were able to distinguish postoperative rectal pain from bladder distention. Group II patients were completely unselected and therefore included patients with prostatism, diabetes, cystocoele and cardiac disease.

Discussion

Factors commonly held responsible for postoperative urinary retention include spinal anesthesia, rectal pain and spasm, high ligation of the hemorrhoidal pedicle, poor handling of tissues, heavy suture material, numerous sutures, fluid overload, rectal packing, tight bulky dressings, antihistamines and narcotics.[4,6,7,9]

In group II all surgery was performed under local anesthesia, employing the long acting anesthetic bupivacaine. Surgery was performed using well established principles of anorectal surgery and using 2-0 chromic catgut on fine gastrointestinal needles. Fluids during surgery were limited to less than 200 c.c. and the infusion was discontinued at the termination of the procedure. Rectal packing was never employed and all dressings were applied loosely. Narcotics were prescribed in large doses and given as often as needed. Postoperatively, oral fluids were limited until the patient voided. (Figure 2)

Prevention of urinary retention

1. Local anesthesia
2. Good surgical technique
3. No packing
4. Loose dressings
5. Limited intraoperative fluids
6. Limited postoperative fluids
7. Avoid antihistamines
8. Patient & nursing education

Figure 2

Just as important as the above principles is careful patient and nursing education. All patients were told of the limited postoperative fluid intake prior to their hospital admission. The nursing staffs of the various hospitals where this project was undertaken were carefully instructed on the methods and purposes of the regimen and were specifically instructed not to suggest voiding to the patients on the day of surgery.

Whether the present rate of catheterization of zero per cent can be continued is impossible to predict, but as stated by Campbell,[2] it should certainly approach this figure. Certainly urinary retention and catheterization is not without its sequelae especially in diabetics, elderly men, and patients with past and present urinary tract infections. Catheterization is frequently the most vivid memory retained by the patient undergoing anorectal surgery.

Summary

A prospective study was established with the intention of abolishing postoperative urinary retention and catheterization following hemorrhoidectomy. A retrospective study was also done to determine the incidence of catheterization. The results indicate that catheterization following hemorrhoidectomy should not be necessary when the proper steps are taken to prevent urinary retention.

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Osteopenia: Osteoporosis, Osteomalacia and Other Forms of Decreased Mineralized Bone Mass

(This is the second of a series of five articles on calcium metabolism)

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A decrease in the amount of mineralized bone seen on routine radiographs is quite common in elderly patients and is often associated with signs and symptoms of impaired skeletal function, including bone pain, fractures and deformities. This article will present a clinical approach to the diagnosis and management of the heterogeneous group of disorders which can present this radiologic picture (Figure 1). At the outset it is essential to define precisely the terms to be used.

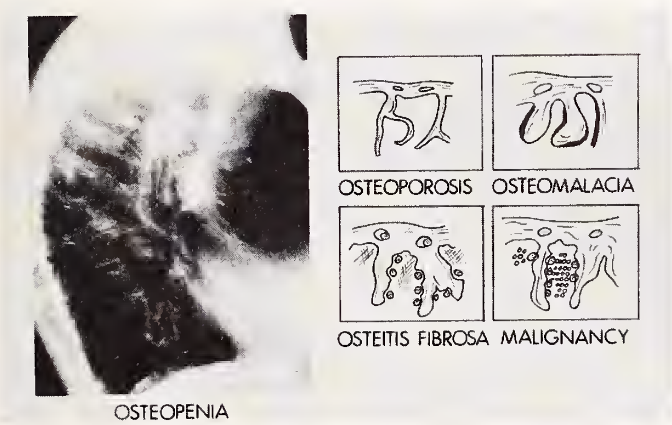

Figure 1

The Etiology of Osteopenia

The radiologic picture of decreased bone density and vertical crush fracture on the left is most often associated with osteoporosis in which there is a parallel decrease of mineral and matrix, but can be due to osteomalacia with deficient mineralization and excess osteoid to osteitis fibrosa cystica due to increased PTH-stimulated osteoclastic bone resorption, or to malignancies which produce osteopenia by various mechanisms.

Osteoporosis—decreased cortical and trabecular bone mass in which both mineral and matrix are decreased to the same extent and there is no gross abnormality of bone composition. Subtle chemical defects in mineral or matrix may exist but have not been demonstrated.

Osteomalacia—decreased bone mass associated with failure of mineralization. By definition patients with osteomalacia have a relative excess of unmineralized osteoid. Osteomalacia in adults and rickets in children are the same fundamental disorder, except that in children when the epiphyses are not yet fused cartilage overgrowth occurs and produces characteristic deformities and radiologic changes.

Osteitis Fibrosa Cystica—the bone lesions of hyperparathyroidism are characterized by increased osteoclastic bone resorption and fibrous tissue proliferation. Mineralized bone mass may be decreased in some patients, but if bone formation increases to compensate for the increased bone resorption there may be no net bone loss.

Osteopenia—this generic term has been used recently to include the whole group of disorders which present radiologically as decreased mineralized bone mass. The term is useful because it does not presuppose any particular pathology for the radiologic picture. Table 1 emphasizes the importance of not making a premature distinction between osteoporosis and osteomalacia. There are no pathognomic radiologic findings in osteoporosis nor are any of the different forms of osteoporosis distinguishable by radiographs. Moreover in patients with osteomalacia, hyperparathyroidism or malignancy decreased bone density may be the only radiologic finding. In other patients specific radiologic findings may help make the diagnosis. The pathognomonic finding in osteomalacia, the pseudofracture or Looser's zone, appears radiologically as a small defect in the cortex or small areas of sclerotic bone representing repair. These are seen only in about 5% of patients. Pseudofractures occur most often in the pubic rami, femoral neck and lateral border of the scapula; they may occur at sites where arteries cross bone or enter the cortex, but these are not the only sites.

TABLE 1

PERSPECTIVE IN OSTEOPENIA

1. Osteoporosis is a histologic, not a radiologic, diagnosis.
2. Osteoporosis and osteomalacia can occur together.
3. Osteomalacia is more common than generally thought.
4. Patients with osteomalacia show a better response to therapy than patients with osteoporosis.
5. Normal serum calcium, phosphate and alkaline phosphatase values do not exclude osteomalacia.

In hyperparathyroidism some patients show the pathognomonic change of sub-periosteal resorption in the phalanges; best detected using magnification of fine-grain radiographs. These changes can occur in secondary as well as primary hyperparathyroidism.

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Other characteristic findings such as cystic lesions (brown tumors), the "salt and pepper" mottling of the skull and the absence of lamina dura are not only rarely seen in hyperparathyroidism, but are not necessarily diagnostic.

There are a number of radiologic findings which have been described as characteristic of osteoporosis but are found in all forms of osteopenia; these include so-called "codfish" vertebrae in which the vertebral bodies show biconcave compression with relative expansion of the nucleus pulposus, Schmorl's nodes which represent propulsion of a portion of the nucleus pulposus into the vertebral body and trabecular bone loss changes in the vertebral bodies and head and neck of the femur. These together with vertebral body compression are the major findings in osteopenia. Radiologic assessment of mineral content of the bone is relatively insensitive. Ordinarily at least 40% of mineral content must be lost before the radiologist can clearly state that bone density on routine x-rays is decreased.

New methods for the evaluation of bone mass such as photon beam absorptiometry can detect fairly small changes in cortical or trabecular bone density in the radius and ulna. Quantitative radiographs using aluminum wedges as references and computer analysis may also detect relatively small changes. Total body calcium content can be measured by neutron activation analysis, but requires complex apparatus which is not generally available. While these approaches may help us to determine the severity of bone loss or monitor progress in patients with various forms of osteopenia, they do not provide any specific diagnostic information. Moreover, it is not always possible to correlate the degree of abnormality in bone mass with the severity of the symptoms or the defect in skeletal function in a given individual.[1]

Osteoporosis

Osteoporosis can be defined as the condition in which bone mass is less than expected for the age and sex of the patient and in which the bone is fully mineralized. There are no characteristic laboratory abnormalities. It can only be differentiated from other forms of metabolic bone disease morphologically. This requires a bone biopsy with histologic examination of undecalcified sections. Samples obtained using ordinary bone marrow biopsy needles are inadequate because the fragments are too small and often distorted. Several new bone biopsy needles have been introduced specifically for use in diagnosis and study of metabolic bone disease, and bone biopsy is now part of the diagnostic work-up of osteopenic patients where the underlying etiology is unclear.

Osteoporosis must be assessed against the known changes in skeletal mass with age, and differences due to sex and race. Normally bone mass continues to increase after linear growth stops at puberty, and reaches a maximum between 20 and 40 years of age. Thereafter, bone mass gradually decreases as endosteal resorption and the formation of haversian canals continues and the resorbed bone is not fully replaced by new bone formation. The outside diameter of long bones does not decrease. The maximum bone mass is greater in men than in women and greater in blacks than in whites. Age-related bone loss occurs in all groups, but those who start off with more bone are less likely to develop symptomatic osteoporosis later.

There is no sharp dividing line between clinical osteoporosis and normal age related bone loss, nor is it known whether the clinical manifestations are due to acceleration of bone resorption or inhibition of bone formation. Decreased bone mass may be secondary to a number of specific disorders (Table 2), including Cushing's Syndrome, thyrotoxicosis, chronic renal failure, Turner's Syndrome, immunosuppressive therapy, prolonged heparin therapy, mastocytosis, and osteogenesis imperfecta. The great majority of patients with osteoporosis, however, have no associated disorder. We divide these patients into "postmenopausal," "senile," "idiopathic," and "juvenile," on the basis of age and sex, but these patients proba-

TABLE 2

CAUSES OF OSTEOPENIA

I. OSTEOPOROSIS
  - senile or postmenopausal
  - idiopathic
  - juvenile
  - osteogenesis imperfecta
  - immobilization
  - heparin therapy
  - chronic renal failure
  - thyrotoxicosis
  - Cushing's Syndrome
  - Turner's Syndrome

II. OSTEOMALACIA
  - vitamin D deficiency
  - gastrointestinal malabsorption
  - chronic renal failure
  - hypophosphatemic osteomalacia (phosphate diabetes; vitamin D resistant osteomalacia)
  - vitamin D-dependent osteomalacia
  - anticonvulsant therapy

III. OSTEITIS FIBROSA CYSTICA
  - primary hyperparathyroidism
  - pseudo-hypoparathyroidism

IV. MALIGNANCIES
  - myeloma
  - metastatic bone disease
  - tumors secreting PTH-like hormones

bly represent an even more heterogeneous group with different pathogenetic mechanisms.[2,3,4]

Osteomalacia

Osteomalacia occurs more frequently than has been recognized in the past. On the basis of bone biopsy, it has been estimated that about 25% of patients with vertebral fractures diagnosed as post-menopausal or senile osteoporosis have some element of osteomalacia. Table 2 lists some of the many causes of impaired mineralization. In the elderly population there are probably multiple factors responsible for the development of osteomalacia, including poor diet, impaired renal function, and hence the impaired activation of vitamin D. Gastrointestinal absorption of calcium is generally decreased with age, and the ability to increase absorption in response to calcium deprivation found in young individuals may be lost.

Serum calcium, phosphate, and alkaline phosphatase values are normal in as many as 80% of histologically proven cases of osteomalacia. Hence, laboratory tests cannot be used to exclude the diagnosis. However, those patients with osteopenia who do show abnormally low serum calcium or phosphate or high alkaline phosphatase should be strongly suspected of having osteomalacia. As noted above, pathognomonic pseudofractures are seen in less than 5% of cases. In most cases the only way the diagnosis of osteomalacia can be made is by bone biopsy and examination of undecalcified sections. Although criteria for the diagnosis vary, they are based on finding increased width of osteoid seams or a disproportionately large amount of osteoid relative to the apparent rate of bone formation. The diagnosis can be confirmed by showing a decreased mineralization rate or defective calcification front using tetracycline labeling.[5]

Osteitis Fibrosa Cystica

Hyperparathyroidism produces overt osteitis fibrosa cystica relatively infrequently. Most patients present with hypercalcemia and renal stones or non-specific symptomatology. Nevertheless, hyperparathyroidism may present a radiological picture of decreased bone density, particularly in elderly patients. The differential diagnosis is particular important because the disease is potentially curable by surgery. Presumably in these patients hyperparathyroidism either develops in an already osteoporotic skeleton, or the increased bone resorption produced by hyperparathyroidism cannot stimulate the increase in bone formation which occurs in younger individuals. Because secondary hyperparathyroidism occurs in patients with osteomalacia and increased circulating PTH has been found in some patients with osteoporosis, the immunoassays for PTH alone cannot make the diagnosis. Hypercalcemia is the most important feature, but may be relatively slight. Other tests to differentiate hyperparathyroidism are described in a later article in this series.[6]

Diagnostic Work-up for Osteopenia

When a patient presents with symptoms or radiologic findings of impaired skeletal function and decreased mineralized bone mass, all the potential causes listed in Table 2 should be considered and ruled out whenever possible. These include not only osteoporosis, osteomalacia, and hyperparathyroidism, but bone loss due to myeloma, metastatic bone disease or tumors secreting ectopic PTH or other osteolytic factors. We routinely measure thyroid hormone concentrations to rule out thyrotoxicosis and morning serum cortisol, following dexamethasone, 1 mg given the evening before (overnight dexamethasone suppression test), to rule out Cushing's Syndrome. Serum protein electrophoresis, Bence Jones protein, and immunoelectrophoresis are used to rule out myeloma. Serum calcium, phosphate, alkaline phosphatase, total protein, albumin and creatinine should be determined more than once and urinary excretion of calcium, phosphorus and creatinine measured. Calcium loading tests, described in a later article in this series,[7] may be useful. Immunoassay for PTH and urine cyclic AMP may be helpful.

Certain combinations of tests are diagnostic in metabolic bone disease but these are encountered only infrequently in patients with osteopenia. In hyperparathyroidism the combination of high serum calcium, low serum phosphate, high PTH and increased urinary excretion of calcium, phosphate and cyclic AMP are diagnostic. In osteomalacia, low serum calcium and phosphate with high alkaline phosphatase and low urinary excretion of calcium are a diagnostic combination, but this combination is encountered in relatively few patients. In osteoporosis the only diagnostic combination is a set of normal laboratory values and this does not rule out other disorders.

Radiologic studies may be useful, including metastatic surveys for osteolytic lesions of malignancy, films of the hands and skull for hyperparathyroidism and films of the pelvis, scapula, and proximal ends of long bones for pseudofractures of osteomalacia. Bone scans using technetium labeled diphosphonates are useful in detecting metastatic lesions, but can also show increased uptake in areas of recent fracture in osteoporosis and in cystic lesions of hyperparathyroidism. Bone scans are generally more sensitive than radiographs in finding lesions, but are less helpful in determining the nature of the lesion.

In many patients the only way to make a definitive diagnosis and develop a rational plan for therapy is to obtain a bone biopsy and examine undecalcified sections histologically. Useful biopsies are obtained from the iliac crest as a through-and-through core of bone, containing both cortices and the intervening trabecular bone. Interpretation of the biopsy is difficult. A variety of techniques such as quantitative morphology, microradiography, and use of tetracycline labeling to measure mineralization rates have been employed to help in this interpretation.[8]

Even though other disorders may be ruled out, if a bone biopsy has not been obtained, one is still faced with the problems of differentiating osteoporosis from osteomalacia. In the absence of histological data, a therapeutic trial of vitamin D and calcium may be used, but this is not entirely satisfactory for two reasons. First, calcium and vitamin D may be effective for relief of pain in osteoporosis. Second, calcium and vitamin D therapy is potentially toxic. For adequate treatment of osteomalacia as much as one-half to two grams per day of calcium and 50,000 to 100,000 units per day of vitamin D may be required. Osteomalacia is most often the result of impaired absorption of vitamin D and calcium and only high doses can overcome the defect. Such high doses can produce toxic hypercalcuria, hypercalcemia and soft tissue calcium and phosphate deposition. Patients must be monitored with frequent determinations of urine and serum calcium during treatment. If a therapeutic trial is being conducted to rule out osteomalacia, it is advisable to give sufficient calcium and vitamin D to produce a definite increase in urinary calcium.

Management of Metabolic Bone Disease

1. *Osteoporosis*

There is no known therapy of proven efficacy for osteoporosis. Exercise, including weight bearing, is probably an important preventive measure. It is known that immobilization and loss of weight bearing markedly accelerates bone loss and impairs bone formation. In patients with back pain due to compression fractures, the use of orthopedic appliances helps maintain greater activity with less pain, and may also help prevent further compression. Good general nutrition is also important. It seems likely that poor nutrition during skeletal development may decrease bone mass early so age-related loss of bone produces symptoms sooner. Despite many years of use, estrogen therapy has still not been proven to be of therapeutic benefit in elderly females with established osteoporosis. There is some recent evidence that estrogens given immediately after menopause can prevent bone loss for several years, and hence, may retard the subsequent development of clinical osteoporosis. In general androgens are no better than estrogens. While oral calcium supplements and vitamin D have not been proven to be useful therapeutic agents in osteoporosis, unless there is a concommitant element of osteomalacia, such therapy may decrease the rate of bone resorption and slow the rate of bone loss. Intravenous calcium infusions were found to be clinically effective in patients with idiopathic osteoporosis, most of whom were young or middle-aged males. There is no evidence that such infusions are effective in post-menopausal osteoporosis. The evidence for the efficacy of fluoride in osteoporosis is still not complete. Fluoride can stimulate formation of new bone matrix and may inhibit bone resorption, but fluoride treatment alone can produce the histologic appearance of osteomalacia. The use of fluoride in combination with oral calcium and vitamin D has been recommended, but its long term efficacy has not been proven. Patients treated with fluoride can show an increase in bone mass but this may not be of good structural quality. Calcitonin has been proposed as a therapy for osteoporosis. It could inhibit bone resorption and prevent further bone loss if escape did not occur. However, there is no evidence that calcitonin will stimulate the formation of new strong bone which would be required to improve skeletal function in osteoporotics. Studies are now being initiated to determine whether a metabolite of vitamin D might be beneficial in osteoporotics, but there is as yet no reliable information from such trials.[9]

2. *Osteomalacia*

Proper replacement with vitamin D and adequate supplies of calcium and phosphate should lead to remineralization in osteomalacia and permit the formation of fully mineralized bone. The amount and form of vitamin D used depends on the cause of the osteomalacia. Patients with dietary vitamin D deficiency, which is quite rare in this country, respond well to small doses of either ergocalciferol (vitamin D_2) or cholecalciferol (vitamin D_3), because there is no abnormality of gastrointestinal absorption, or liver or renal metabolism of vitamin D. Most patients with osteomalacia have impairment of gastrointestinal absorption or liver or renal metabolism of vitamin D and either require much larger doses of vitamin D itself or the use of an active metabolite. None of the active metabolites are currently available commercially; however, 1α OH D_3, which bypasses the renal hydroxylase and 25 OH D_3, which bypasses the liver hydroxylase, are both being tested extensively. These are likely to become available before the most active 1α,25 $(OH)_2D$ metabolite, which is much more difficult to synthesize. Dihydrotachysterol, which is an analog of the 1-hydroxylated compounds, is commercially available and is currently being used in osteomalacia due to renal insufficiency.

3. *Osteitis Fibrosa Cystica*

Most cases of hyperparathyroidism are due to a single parathyroid adenoma which can be removed surgically. In patients with hyperplasia or with multiple endocrine neoplasia syndrome, in which there is a high rate of recurrence after the removal of one or more adenomas, sub-total parathyroidectomy has been effective. Recently total parathyroidectomy with autotransplantation of part of one parathyroid gland to the forearm has been advocated as a more precisely controllable approach to parathyroid hyperplasia. Some asymptomatic patients with hyperparathyroidism have been followed carefully without surgery. Frequent monitoring of serum calcium and renal function is required and it is important that such patients not be lost to follow up.

Problems for the Future

We understand little of the pathogenesis of many forms of metabolic bone disease and as a result, our current classification is likely to both lump and split patient groups inappropriately. Recent data suggest that many patients have combinations of metabolic bone disease with multiple pathogenic factors. In particular, many elderly people may have the combination of osteomalacia and osteoporosis. In the presence of osteoporosis, the morphologic appearance of osteomalacia is altered because new bone formation which produces osteoid is diminished. Nevertheless, incompletely mineralized osteoid can be seen. Osteomalacia is altered because new bone formation which produces osteoid is diminished. Nevertheless, incompletely mineralized osteoid can be seen. Osteomalacia and secondary hyperparathyroidism regularly occur together, because osteomalacia is generally associated with decreased absorption of calcium from the intestine which leads to transient decreases in ionized serum calcium concentration and stimulates PTH secretion. Initially in osteomalacia secondary hyperparathyroidism can increase bone resorption and maintain normal or nearly normal serum calcium concentration. With severe vitamin D deficiency parathyroid hormone responsiveness is lost and hypocalcemia occurs. Osteoporosis and secondary hyperparathyroidism may also occur together. It was recently found[8] that in post-menopausal patients with normal serum calcium and phosphate whose bone biopsies showed osteoporosis and not osteomalacia or osteitis fibrosa cystica, there was a sub-group in which circulating PTH concentrations were increased and the cortical bone showed an increased number of osteoclasts. Finally, there are the recent findings that the osteoclast activating factor from human lymphocytes is important in the pathogenesis of bone loss in multiple myeloma and prostaglandins are important in the pathogenesis of hypercalcemia and osteolytic lesions in certain malignancies. It is certainly possible that these and other humoral agents play a role in the pathogenesis of bone loss in non-neoplastic metabolic bone disease. With intensive study and new methodology, we can certainly anticipate substantial developments in our understanding of the pathogenesis of osteopenia. These are essential if we are to develop more rational therapeutic programs to deal with this common clinical problem.

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New Techniques for Prenatal Diagnosis: Their Safety, Accuracy, and Use

(This is the second of a series of six articles on genetics)

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Abstract—The past twenty years have seen the rapid expansion of safe, new, and accurate means for diagnosing disease in the unborn fetus. This ability extends from chromosomal disorders through inborn errors of metabolism and now includes the neural tube defects.

The desire for normal, healthy children is most certainly a universal one. This desire has been the stimulus for the development of prenatal diagnostic techniques which can be used to enable families to increase their chances of having a normal child. The past few years have seen a dramatic increase in the availability and safety of prenatal diagnostic methodology. This article will review the safety and accuracy of these methods and indications for their use.

The first report of successful prenatal diagnosis using cytologic techniques was published by Fuchs and Riis in 1956.[1] Utilizing amniotic fluid obtained at delivery or surgical interruptions of pregnancy, they stained Barr bodies in amniotic cells and correctly predicted the sex of 20 infants. At the time, they commented that the usefulness of this technique in humans would be quite limited. Four years later, however, they reported the applicability of cytologic diagnosis to the prevention of human genetic disease caused by X-linked genes.[2] In 1966, Steele and Breg[3] cultured amniotic cells and reported full karyotype analyses, thus laying the foundation for prental diagnosis of chromosomal abnormalities.

The ten years that followed have seen the parallel development of accurate laboratory methods for the diagnosis of many biochemical disorders and virtually all chromosome abnormalities,[4,5] along with improved obstetrical techniques for the safe performance of transabdominal amniocentesis. In addition, extra-uterine techniques such as ultrasound examination are contributing more and more information about the fetus.

Technique of Amniocentesis

Transabdominal amniocentesis for the management of RH disease has been in use since the 1930's. Most such amniocenteses are done in the third trimester, well beyond the time when pregnancy termination or some fetal therapies can be considered. Studies for prenatal diagnosis of genetic disease must be accomplished early enough to allow treatment of a diseased fetus, if possible, or termination of pregnancy if a serious untreatable abnormality is detected. Practical limitations have precluded amniocentesis in the first trimester. The volume of amniotic fluid required for testing is 10-20 ml. The entire amniotic fluid volume at 10 menstrual weeks of gestation is only 30 ml. By 16 weeks this volume has risen to about 175 ml, and most amniocenteses can be done during the 15th or 16th week. Since it may take three weeks to grow enough amniotic cells for testing, the procedure should be performed by 19 weeks if possible.

Ultrasound examination of the uterus immediately prior to amniocentesis, without having the woman move from the examining table, is recommended to maximize the safety and available diagnostic information from the procedure. Localizing the placenta and especially the umbilical cord attachment site, finding large fibroid tumors, and identifying the position of the fetus, enables selection of an entry site on the maternal abdomen that gives safe and easy access to a pocket of amniotic fluid(Figure1). Because the fetus can readily move within the midtrimester uterus, simple positioning maneuvers with the mother can provide an accessible pocket of fluid when initial ultrasound examination fails to identify an appropriate site. Avoiding the introduction of blood into the amniotic fluid is critical for some diagnostic tests such as the measurement of α-fetoprotein. Ultrasound also can diagnose a twin pregnancy so that special techniques can be used to obtain fluid from two amniotic sacs.

Local skin anesthesia is usually used, and then the uterus is aseptically entered transabdominally with a 20 gauge spinal needle; 10-20 ml amniotic fluid are withdrawn into a plastic syringe. The desquamated fetal cells floating in the fluid are separated by centrifugation and put into tissue culture. The fluid is utilized for biochemical analyses. Corroboration of

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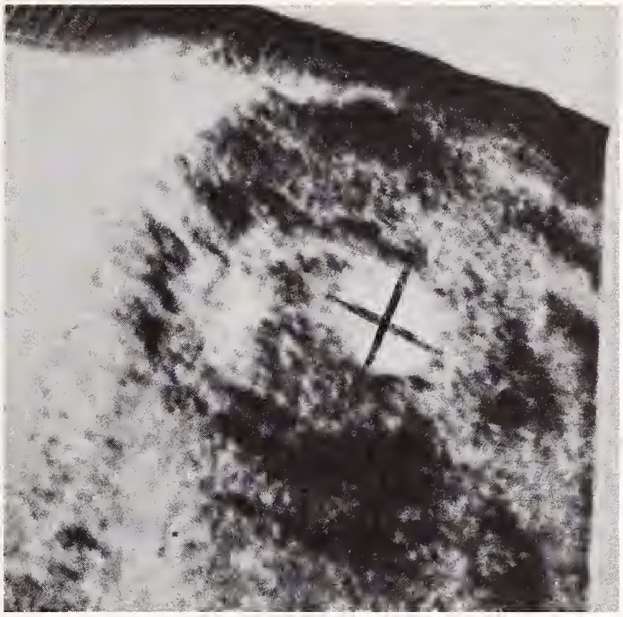

Figure 1.
Ultrasonogram in transverse plane 3 cm. above the symphysis pubis in a 16 week pregnancy.

At the top of the scan is the mother's abdominal wall. The fetal head (dark circle) lies on the left side of the uterine cavity and the crescent shaped placenta on the right side. This would be a common site for amniocentesis without ultrasound information; but, as shown by the interrupted linear marker, needle entrance at this level could easily miss the small pocket of fluid and stay in the placenta or else it could strike the head. A larger clear pocket of fluid was available 5 cm higher on the abdomen and amniocentesis was performed without complication.

the fetal diagnosis after delivery or abortion is essential to rational use of these methods.

Fetal Karyotype Analysis

The most frequent use of amniotic cells is for karyotypic analysis. This is not surprising in view of the 1 in 200 incidence of chromosomal abnormalities in live births. A recently completed prospective study of 1040 pregnancies undergoing amniocentesis and 992 matched control pregnancies has provided the most recent data.[6] The study was directed by the National Institutes of Health and involved the collaboration of nine prenatal diagnostic centers in this country. In this study, 91% of the amniocenteses were done for cytogenetic indications. About half of these were for women over age 35; another quarter were for women who had borne a previous child with trisomy 21 (Down syndrome). Although trisomy 21 was the most common karyotypic abnormality seen, trisomy 13 and trisomy 18 were also reported, as well as sex chromosome abnormalities. Our experience in New Haven has been comparable. Table I shows the preponderance of tests being done for fetal karyotype and the increased use of amniocentesis in the past two years. It has been estimated[7] that in order to prevent 50% of Down syndrome births, all pregnancies in mothers over the age of 30 years would have to be monitored. If this were done for New York City alone, some 30,000 amniocenteses per year (based on 1970 census) would have to be done. In Connecticut, the annual birth rate is about 35,000. Since 20% of all births occur to women over age 30, 7,000 amniocenteses would be required each year to decrease the incidence of Down syndrome by one-half.

The other indication for karyotype is determination of fetal sex.This is done when an X-linked disorder, affecting only males, is being considered. For some X-linked disorders, e.g. Hunter syndrome (mucopolysaccharidosis II), Fabry disease and Lesch-Nyhan disease, definitive fetal biochemical diagnosis can be made. In the case of other disorders, hemophilia A and Duchenne muscular dystrophy for example, affected and unaffected males cannot be distinguished. Fetal sex determination can only give the family the option of aborting all males; each male fetus would have a disease risk of 50% as well as a 50% chance of being normal.

The accuracy of cytogenetic diagnosis of the fetus has been over 99%. A rare error has resulted, probably from inadvertent culture of maternal cells which contaminated the amniotic fluid specimen. If a twin pregnancy is present and this is not recognized or fluid is obtained from only one twin, incomplete diagnostic information will result.

Fetal biochemical diagnosis

Biochemical analyses using cultured amniotic cells are potentially very accurate. The criteria for successful diagnosis of the inborn errors of metabolism are that the chemical abnormality be expressed in amniotic-fluid or cultured amniotic cells, that appropriate control values be known, and that homozygous affected fetuses be distinguishable from heterozygous carriers. There are presently more than 60 inherited biochemical disorders of amino acid and carbohydrate metabolism, sphingolipid catabolism, and other lysosomal enzyme function which can be detected (see Table II). Two important recessively inherited conditions, phenylketonuria and cystic fibrosis remain undetectable. Unfortunately most families in whom a pregnancy is at risk are ascertained because of a previously affected child. In the case of Tay-Sachs disease, an important exception is seen. Because the disease has a 100-fold higher incidence in Ashkenazi Jews, that population is being offered carrier detection so that couples at risk can be detected and the initial occurrence of the disease can be prevented. Such a program can theoretically be carried out for any disorder in which an identifiable group at risk and an accurate technique coincide.

Sickle cell anemia and β-thalassemia (Cooley's anemia) are examples where much effort is now being expended.

The use of the amniotic fluid itself for biochemical analysis has been somewhat limited. One biochemical determination which is now receiving increased use is a-fetoprotein concentration (Table I). Elevated concentrations for gestational age in midtrimester have been found to correlate with open dysraphic neural tube abnormalities.[8] Alpha-fetoprotein is made in fetal liver during the first 30 weeks of gestation; peak concentrations occur between 13 and 15 weeks and the protein appears in the serum and spinal fluid of the fetus, as well as amniotic fluid. Concentrations are very high in fetal serum and contamination of amniotic fluid with fetal blood will give abnormally elevated concentrations. The likelihood of detection of excess a-fetoprotein increases with the severity of the dysraphic process. It has been suggested that the accuracy of predicting neural tube defects using amniotic fluid α-fetoprotein concentration approaches 90%.

Early reports of elevated plasma concentrations of α-fetoprotein in women carrying an affected fetus suggest that such a screening test may be available in the future. Since there have been a few reports of both falsely normal and falsely abnormal α-fetoprotein concentrations, the combination of α-fetoprotein determinations with ultrasonography may increase the predictive accuracy.

Ultrasonography

Anatomic definition of the fetus can be partially accomplished with two-dimensional grey scale ultrasound. The presence of major limb bones will exclude certain inherited birth defects, and examination of the fetal kidneys and bladder (Figure 2) can aid in the diagnosis or exclusion of major urinary tract abnormalities. Anencephaly, hydrocephaly, and large meningomyeloceles or omphaloceles can be seen on sonograms. Further developments in this rapidly advancing technology will eventually allow detailed examination of the spine for all but the smallest spina bifida (neural tube) defects and examination of the fetal heart for major abnormalities of that organ. If any risks attend the diagnostic use of ultrasound during early fetal life, they have yet to be uncovered. Higher energy levels cause definite cellular damage, but energy levels and duration of exposure for diagnostic purposes have thus far had no untoward effects in experimental animal and cell systems or in the experience with human pregnancies.

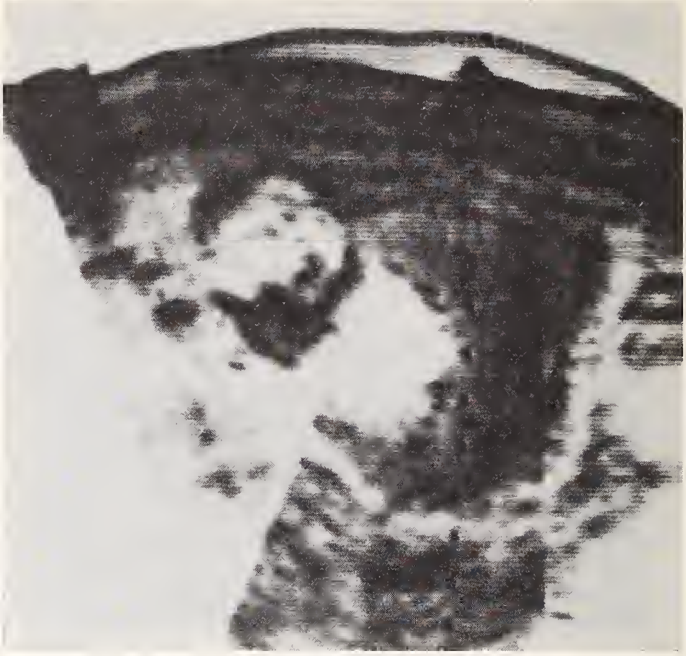

Figure 2

Ultrasonogram showing the fetal bladder as a clear area (0.5 cm diameter) in the middle of the fetal trunk.

Perpendicular lines have been drawn through the center of the bladder to estimate its size. The volume of the bladder was shown to change over several minutes time documenting the formation and excretion of urine by this fetus.

Fetoscopy

Recently, experimental techniques have succeeded in obtaining small volumes of fetal blood from the placenta which have been used for the diagnosis of b-thalassemia and sickle cell disease. One of the methods utilizes fetoscopy in which a small diameter (2.5 mm) endoscope is introduced into the uterus for direct viewing of the fetus and placenta.[9] Although

Table I

EXPERIENCE AT YALE-NEW HAVEN HOSPITAL WITH GENETIC AMNIOCENTESIS

Indication For Test	*1967-73*	*1974-May 1976*
Karyotype	139	259
advanced maternal age (35 and over)	91	204
previous trisomy	45	49
translocation carrier	3	6
X-linked disease (sex determination)	4	3
Inborn error of metabolism	13	9
Neural tube anomaly	0	23
Total	156	294

Table II

INBORN ERRORS OF METABOLISM

Examples of prenatally detectable disorders in several disease classes

1. Lysosomal Storage Diseases
    - Lipid metabolism (e.g. Tay-Sachs disease)
    - Mucopolysaccharide metabolism (e.g. Hurler syndrome)
    - Glycogen storage disease, type II
2. Amino Acid Metabolism
    - Amino acid catabolism (e.g. methylmalonic acidemia)
    - Cystinosis
3. Carbohydrate Metabolism
    - Galactosemia
    - Glycogen Storage Diseases, types III, IV, VI
4. Nucleotide Metabolism
    - Xeroderma pigmentosum
    - Lesch-Nyhan disease
    - Combined immunodeficiency disease (adenosine deaminase deficiency)
    - Orotic aciduria
5. Porphyrin Metabolism
    - Acute intermittent porphyria
    - Protoporphyria
6. Trace metal metabolism
    - Menkes disease
7. Hemoglobinopathies
    - Sickle cell anemia
    - β-thalassemia

improvements in the mechanical and optical properties of the endoscope are necessary for full visualization of the fetus, partial viewing has already been used to seek high risk birth defects. Further assessment of the risks and diagnostic accuracy of fetoscopy and fetal blood sampling is necessary to define the role of these procedures; they potentially offer significant expansion of both diagnostic and therapeutic approaches to the fetus.

Risk of amniocentesis

Complications for either mother or fetus from midtrimester amniocentesis have been very few. Occasional case reports have cited instances of amnionitis, vaginal bleeding, miscarriage, isoimmunization of the mother to fetal antigens, and possible direct trauma to the fetus. Reported large series of amniocenteses without known complications imply that any of the above problems is occurring no more than once or twice in several hundred procedures. This conclusion is supported by the NIH Collaborative Study 6. No increase in fetal loss (miscarriage, stillbirths) or in complications of pregnancy or delivery were found in the amniocentesis group, and the babies born after amniocentesis did not differ from the control infants at the time of newborn examination or at one year of age. These data warrant the conclusion that significant problems related to amniocentesis will occur with a frequency less than 1 in 200. Appropriate use of ultrasound before amniocentesis will help to reduce this figure further.

Occasional laboratory problems may prevent a final diagnosis. Cytogenetic analysis and the majority of biochemical analyses require the growth of sufficient amniotic cells in tissue culture. This may fail because not enough viable cells were present in the original sample, because the sample was not handled properly or was delayed in transit to the laboratory, or because of problems intrinsic to the growth of cells in culture. At the present time laboratories are reporting failure to grow cells in less than 5% of samples;[6] a second amniotic fluid sample is requested in those instances.

Prenatal diagnostic services in Connecticut

In addition to experienced obstetrical and ultrasound facilities and expert laboratory services, parents seeking prenatal diagnosis also require accurate genetic counseling tailored to the needs of the individual couple. The reason for seeking a diagnosis must be clear and any problems in making that diagnosis must be understood. Vital to the counseling function is the availability of support to parents for various options they may elect after fetal diagnosis. Each parent should be encouraged to think through her or his feelings about pregnancy termination should a fetal abnormality be diagnosed.

Two centers for prenatal diagnosis of birth defects now exist in Connecticut for the purpose of coordinating the necessary services. These are at the two medical schools: University of Connecticut School of Medicine, Farmington, under the direction of Dr. Robert M. Greenstein, Department of Pediatrics (674-2676); and Yale University School of Medicine, New Haven, under the direction of Dr. Maurice J. Mahoney, Departments of Human Genetics and Pediatrics (436-4579).

Present Recommendations

Our present recommendations are based on known risks of fetal disease (Table III) and on the information about safety of amniocentesis provided by the NIH Collaborative Study.[6]

1. *Pregnant women 35 years old and over:*

The risk of having a child with Down syndrome is

Table III

DISEASE RISK IN FETUS WHEN AMNIOCENTESIS IS CONSIDERED

Advanced maternal age (35-45)	½ - 6%
Previous child with Down syndrome	1%
Translocation carrier parent (Down syndrome, D/G translocation)	3-15%
X-linked disease	50% in male
Inborn errors of metabolism (recessive disorders)	25%
Previous neural tube anomaly	5%

about 1 in 300 for the 35 year old woman, as compared with 1 in 1200 at age 25. This risk rises to 1 in 45 at age 45. The risk at age 35 of having some chromosomal abnormality is about 1 in 200. Thus the risks of a chromosomally abnormal infant are greater than known risks of amniocentesis. The option of amniocentesis for a chromosomally abnormal fetus should be offered to every pregnant woman 35 years old or over.

2. *Previous chromosome abnormality:*

The recurrence risk for Down syndrome for a woman who has already borne an infant with trisomy 21 (Down syndrome) is about 1%. This risk is also higher than the risk of amniocentesis. Accurate recurrence risks for the other autosomal trisomies and the sex chromosome abnormalities are not known, but the apparent safety of amniocentesis suggests that the techniques can be offered to families with prior history of a child with any major chromosomal abnormality.

3. *Translocation carrier parent:*

Estimates of risks to the offspring of translocation carriers vary from 3 to 15% for D/G translocation carriers to 100% for 21/21 translocation carriers. Risks to carriers of uncommon translocations are unknown, but fetal diagnosis should be made available to all translocation carriers.

4. *Inborn errors of metabolism:*

The recessive inborn errors of metabolism have a recurrence risk of 25%. Prenatal diagnosis should be considered in all of these for which a definitive biochemical diagnosis can be made.

5. *Identified heterozygotes:*

Carrier detection programs such as the Tay-Sachs Disease Prevention Program will continue to detect couples in which both spouses are carriers of the same recessive gene. Each pregnancy to such couples has a 25% risk of an affected child, and fetal diagnosis should be made available.

6. *X-linked disorders:*

Fetal sex determination using amniotic cells should be offered to women known to be carriers for X-linked disorders in which definitive biochemical diagnosis cannot be accomplished.

7. *Neural tube anomalies:*

The recurrence risk of 5% for a neural tube disorder when a couple has had such a child (either liveborn or stillborn) makes amniocentesis for a-fetoprotein determination a reasonable option. First degree relatives of affected persons may have a high enough risk themselves to warrant fetal diagnosis.

Prenatal diagnosis is undertaken to diagnose only a small number of possible disorders, usually only one, for which the fetus in question has an increased risk. Almost all pregnancies carry a nonspecific risk of about 3% that a child will be born with a major birth defect. Added to this will be an additional specific risk in a given pregnancy, such as the risk of chromosomal abnormality in a woman over 35. This specific risk is being addressed with prenatal diagnosis. It is extremely important that parents do not assume that all possible birth defects are being sought and are ruled out by a normal report from the laboratory.

Summary

The last 20 years have seen the emergence of safe, accurate techniques for diagnosing abnormalities in fetal development which may allow selective termination of affected pregnancies and may lead to therapy for diseased fetuses. Several categories of patients can be identified for whom prenatal diagnosis can be recommended. Physicians should inform these families that such services are available.

1. Maternal age 35 years or older
2. Previous chromosomally abnormal infant
3. Translocation carrier parent
4. Previous child with inborn error of metabolism
5. At risk couple identified by screening
6. Woman heterozygous for X-linked disorder
7. Previous neural tube anomaly

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C.T. in CT.
or
CATS in CONN.
or
Computerized Axial Tomography in Connecticut

Gerald S. Freedman, M.D.

An Overview in Two Parts

Part 1. The evolution of the C.T. scanner with a profile of current equipment is followed by a listing of equipment in the State. The recommendations of the State's C.T. task force are presented with an editorial overview of the interaction between legislative vs. physician health planning.

Part 2. A clinical discussion of head and body C.T. to be published in early 1977.

Genesis of the Head CAT

The concept of computerized axial tomography (C.T.), which is being heralded as the most revolutionary medical technology since the X-ray tube, was implemented by Godfrey Hounsfield, of the EMI Electronic and Industrial Operations of Middlesex, England.[1] The tomographic concept[2] improves localization and permits the detection of very small differences in soft tissue densities. These density measurements are analyzed by a computer which then reconstructs and displays this data as an image. In this manner, the brain and its surroundings can be precisely evaluated without risk or discomfort to the patient. EMI's first scanner required that the object to be scanned be surrounded by water and the design permitted only the head to be studied. This was also due to the ideal structure of the brain for such computerized analysis, where lack of motion and reproductibility were important factors.

The Body CAT

Subsequently, a computerized axial tomographic unit capable of imaging the entire body was introduced in February of 1974 by Dr. R. Ledley of the National Biomedical Research Foundation. Currently, more than a dozen manufacturers (Tables 1 and 2) are building C.T. scanners. The preliminary releases by the earliest users have been most promising. Their reports have stimulated considerable interest in and speculation as to the total impact of this technology on the field of diagnostic imaging. As a result of this optimistic appraisal, there has been intense technological and commercial interest in C.T. This unprecedented interest and growth is due to a unique set of technological and legislative circumstances. Its importance as a diagnostic imaging methodology lies somewhere between the value of the X-ray tube and the image intensifier. It lacks the uniqueness of the former, yet clearly exceeds the "value added" characteristics of the latter. However, its current initial impact on medicine exceeds the sum of both. The following describes this extraordinary situation and attempts to place it into perspective within the field of radiology (Fig. 1).

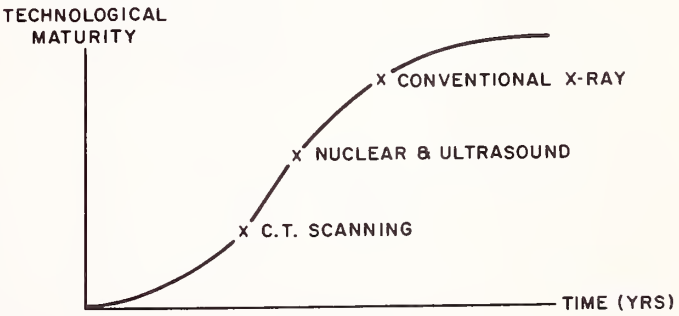

Figure 1

Graphic representation of the development of a technology with time. Conventional X-ray has reached maturity with little change in the last decade; Nuclear Medicine and Ultrasound are still rapidly growing during adolescence. C.T. is in its infancy.

Generation of CATS

CATS have proliferated at an astonishing rate. There are now four generations of CATS available in more than 20 models from more than 15 manufacturers (see Tables). The first generation of CATS were relatively slow. Using a rotation translation principle with one or two detectors, they required several minutes to acquire the data and produce an image.

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Table 1

HEAD ONLY C.T. SCANNERS COMPARISON

	1 *OHIO-NUCLEAR*	2 *EMI*	3 *ARTRONIX*	4 *G.E.-NEUROSCAN*	5 *SYNTEX*
I. *Scanner/Image Specifications:*					
a. Slices per scan	2	2	1	2	1
b. Slice thickness(es) (mm)	Auto-5,8 or 13	Manual 8 or 13	3-15	8, 13	10
c. Scan speeds (sec)	120 or 210	60 or 240	9	270	60
d. Detectors per slice	3	8	256		12
e. Gantry tilt	±20	None	None	10-20°	
f. Field size (cm)	25.1	21.0	24		
g. Matrix	256 x 256	160 x 160	256 x 256		256
h. Element size (mm)	1.0 x 1.0	1.5 x 1.5	1		1
II. *Display Specifications:*					
a. Video displays	B&W/Color	B&W/Color	B&W		B&W
b. Image expand	any portion	quadrants	yes		
c. Area of interest	size density	no	4		
d. Flip/rotate image	yes	no	yes		
e. Spatial reference	yes	no	?		
III. *Price (approx. in thousands)*	400	400	<250	400 (?)	400
IV. *Delivery (approx.)*	8 mo.	8 mo.	6 mo.	6 mo.	6 mo.

Table 2

WHOLE BODY C.T. SCANNERS COMPARISON

	1 *OHIO-NUCLEAR* *A*	 *B*	 *C*	2 *EMI*	3 *PFIZER* *A*	 *B*	4 *PICKER*	5 *G.E.*	6 *SYNTEX*
I. *Scanner*									
a. Slice per scan	2	2	1	1	2	1	1	1	1
b. Slice thickness (mm)	8, 13	8, 13	8, 13	8, 13	7.5	3-13	10	10	10
c. Scan speed (sec)	120-150	18-34	18	20	120-240	30	9	4.8, 9.6	60
d. Detectors per slice	1	several (12)		several	1	several	60	320	12
e. Detector type	crystal	crystal		crystal	crystal		crystal	gas	crystal
f. Gantry tilt	±20	±20	±20	no	±20	±20	no	±15	±20
g. Field diameter (cm)	45	42	42	40	24/48		24/48	42	
h. Matrix	256x256	256x256	256x256	320x320	320x320		240x240	320x320	256x256
i. Element size (mm)	1	1	1	1	1		1-2	1.3	1
j. Generation	1	2	2	2	1		3	3	2
II. *Comp. Reconstruct Time (sec)*	immed.	30	15	100-200	immed.	immed.	20 or 120	30 or 200	150
III. *Price (Approx. in thousands)*	400	525	475	450	350	500	475	595	400
IV. *Delivery*	8 mo.	8 mo.	8 mo.	8 mo.	6 mo.	6 mo.	1 yr.	10 mo.	6 mo.

	7 *PHILLIPS*	8 *ASE*	9 *SEARLE*	10 *ARTRONIX*	11 *VARIAN*	12 *EL SCINT*	13 *CGR*
I. *Scanner*							
a. Slicer per scan	1	1		1	1	Prototype working	Under development
b. Slice thickness (mm)	8, 16	10	3-12	5-25	7.5		
c. Scan speed (sec)	27+	5, 10 or 20	5, 20	405, 9, 18	6		
d. Detectors per slice	30	600	256	512	many		
e. Detector type	crystal	crystal	xenon	xenon	xenon		
f. Gantry tilt	±10-25			no			
g. Field diameter (cm)	25-50	50	45	50			
h. Matrix	256x256	512x512	256x256	256x256			
i. Element size (mm)	1 or 2		1	1			
j. Generation	2	4	3	3	3		
II. *Comp. Reconstruct Time (sec)*	immed.	60	20-40	30,180	120		
III. *Price (Approx. in thousands)*	570	700	500+	300	500+		
IV. *Delivery*	18 mo.	1 yr.	8 mo.	10 mo. $450 both head & body	1 yr.		

14 *SIEMENS*	15 *JAPAN*
?	?

Second generation CATS looked a lot like their forebearers, but were faster (Fig. 2). Translate-rotate technology was speeded up by using more detectors and greater increments of rotation resulting in images within 15-30 seconds. By this time, the reproductive capacity of modern technology had been aroused. Litters of new CATS were announced by proud companies some of whom had never borne anything resembling a CAT in the past. The industrial epidemic grew; mutants and hybirds developed. Their future capabilities expounded by proud parents even prior to their birth. Third generation CATS eliminated the translation motion and reduced the scan time to 5 seconds with a 360° rotation movement of the tube and detector. While several companies are striving to produce this technology, a fourth generation featuring stationary detectors and a 360° rotating tube is already at the prototype level. Beyond that is speculation. Some enthusiasts are encouraging development of ultra fast scanners capable of stopping heart motion.

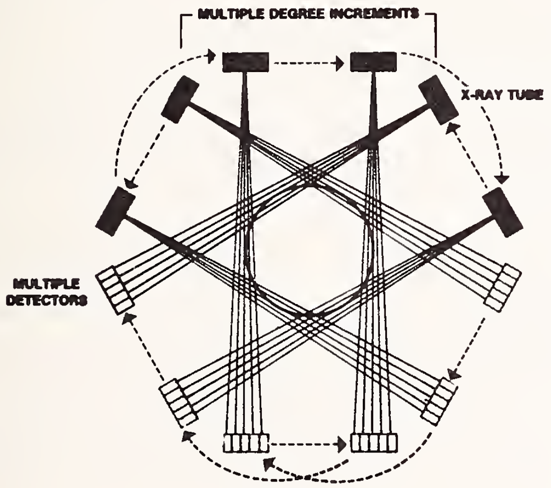

Figure 2

The translate-rotate mechanics of second generation C.T. show the narrow fan beam and multiple detectors capable of scan times of 15-30 seconds for the body and head.

Where the CATS Are

As of September, 1976, there are probably about 400 C.T. scanners in operation in the United States. EMI claims to have installed about 400 worldwide and has orders in excess of 200 more. Of the 200 body scanners in operation worldwide, Ohio Nuclear's DELTA claims over 110 in operation and orders for about 200 more. Pfizer has installed about 35 ACTA units. The remaining companies and units listed in Tables 1 and 2 have fewer than 10 units installed; in fact, most have only prototypes at this point.

Currently, certificate of need applications have been approved for about 600 units. Future projections naturally vary, but representative estimates range from 1,500 to 3,000 by 1980.[3]

CATS in Conn.

Table 3 lists the 7 C.T. units already approved in the State and provides a profile of their distribution; it further anticipates two additional units to round out the geographical distribution in the State. Currently, a moratorium on certificate of need applications is in effect. During this moratorium period, a task force to recommend guidelines to the CHHC has been meeting.

As a member of that task force, the author offers the following summary of this report.[4]

Table 3

APPROVED C.T. SCANNERS IN CONNECTICUT

Location	*Type*	*Model*	*Instal. Date*	*Comments*
Yale-New Haven Hospital	Body	ACTA	June, 75	
Yale-New Haven Hospital	Body	ACTA	June, 76	50% research gift
Greenwich Hospital, Greenwich	Body	EMI	Spring, 77	
Bridgeport Hospital, Bridgeport	Head	EMI	October, 76	
Hartford Hospital, Hartford	Head	EMI	June, 76	
St. Francis Hospital, Hartford	Body	EMI	Spring, 77	
Temple Medical Center, New Haven	Body	?	(June, 77)	outpatient
HSA III			(1977)	
HSA V			(1978)	

INTERIM TASK FORCE RECOMMENDATIONS FOR COMPUTERIZED TOMOGRAPHY STATE OF CONNECTICUT—SUMMARIZED

I. Need Determination Requirements

A. Priority should be given to institutions* which function as major neurological and neurosurgical treatment centers and which possess the specialized facilities and technical and professional staff required to perform radioisotope brain scans, pneumoencephalograms, cerebral angiograms, and major intracranial surgery.

B. It is suggested that a major neurosurgical treatment center should perform at least 250 cerebral arteriograms and 50 intracranial operations per year.

*Applications from groups of professionals who meet the same staffing requirements and who have immediate access for patients to a major hospital which has the diagnostic and therapeutic capabilities referred to herein will also receive consideration for approval.

II. Staffing Requirements

A. Head Scanners

1. There should be sufficient board-certified and/or board-eligible neurologist and neurosurgeons on the medical staff to provide the equivalent of six such full time physicians;

2. There should be at least one full time equivalent neuroradiologist** and one board-certified nuclear medicine specialist. There should be access to one physicist, engineer or biomedical engineer;

3. The pathology service should have a person with special competence in neuropathology.

B. The applicant should submit the names, training, board status, and the percentage of time devoted to specialty practice of the above specialties. The applicant should also name the individuals who will interpret C.T. scans and the percentage of their time that is to be devoted to C.T. scanning. It should also be stated what percentage of time (that the unit is operating) that a neuroradiologist* will be specifically located within the C.T. area.

**A neuroradiologist is defined as one who is a member of the American Society of Neuroradiologists, or is a radiologist (or other physician) who has attained special competence in radiology. Such competence may be demonstrated by additional training and/or extensive practice in neuroradiology. Experience should include angiography, myelography, pneumoencephalography, and training in computerized tomography. Documentation of training and experience should be presented.

C. Body Scanners

1. The minimum number of neurologists or neurosurgeons may be decreased to four in #1 above.

2. There should be at least one full time equivalent neuroradiologist and one board-certified nuclear medicine specialist. There should be access to one physicist, engineer or biomedical engineer;

3. An active nuclear medicine facility, a full time nuclear medicine technician, and a physician specialist in nuclear medicine.

D. The applicant should provide evidence that there is a 24 hour on-call availability of the technical and professional staffs in neurology, neurosurgery, neuroradiology, and anesthesiology.

III. Standard of Use

A. Priority should be given to applicants who provide access to 24 hour emergency service for both inpatients and outpatients.

B. Priority should be given to applicants who provide or have immediate access to 24 hour operating room coverage including on-duty staffs or nursing, anesthesia, and operating room personnel.

C. Applicants would agree that emergency cases should have first priority, and that this priority should extend to emergency cases independent of referral source or financial status.

D. The applicant should agree to develop an ongoing peer review of the activities of its computerized tomography unit. Such review process should deal with questions of technical quality and with the appropriate use of computerized tomography.

E. Applicants should be willing to commit their computerized tomography units to a minimum schedule of sixty hours a week if the need warrants.

IV. Data

A. Applications should include the number of diagnostic cerebral arteriograms and intracranial operations performed by the applicant for each of the three years preceding the application.

B. The applicant whould agree to maintain and provide certain data (to be defined).

C. C.T. facilities should supply the Commission with yearly reports detailing the number and type of studies performed, the actual hours of scheduled and emergency C.T. operations, the numbers of positive versus negative studies, and the number of inpatients and outpatients treated.

D. Applicants shall include, in their application for Certificate of Need, estimates of the number of patients without either self-pay or third-party capability to be served, as well as a financial plan to provide for them.

E. Applicant shall provide the commission on a timely basis with such financial information as necessary for ongoing evaluation.

F. Applicants should be required to make representation as to the financial feasibility of placing a firm order for the equipment within six months of the time of Commission approval.

V. Geographic Distribution and Regional Cooperation

A. Priority will in part be based on the establishment of C.T. scanner distribution to enable patients throughout the State to have reasonable access to C.T. and to provide services to patients whose physicians are not associated with hospitals providing C.T.

1. The applicant shall define, in writing, its procedure for providing access to computerized tomography services, indicating specifically appointment mechanisms for inpatients and outpatients; for patients associated with the sponsoring institution and for patients not associated with the institution; and for routine cases and for emergencies.

2. The applicant shall present, in writing, its commitment to serve residents of the community and the basis for assigning priority in scheduling patients for computerized tomography. Such priority must not discriminate on the basis of the institutional affiliation of the patient's physician. Written letters of intent between the host hospital and hospitals sharing the unit must be presented.

3. Distribution of these statements of policy and procedure as described in #1 and #2 above must be made to all hospitals, ambulatory care institutions in the region, to the County Medical Society, and to the Health Systems Agency within three months of receiving certification.

4. The applicant shall agree to provide reports on the status of regional cooperation to the CHHC and HSA on a semi-annual basis, including the relevant data as will be designated.

B. There should be a geographical preference to applicants who otherwise meet these guidelines to provide a unit in Health Service Area III. Following this preference should be given to a unit in Health Service Area V.

C. In certain cases, approval for a second C.T. scanner should be granted to an institution in preference to a less well qualified institution applying for its first unit. Second unit approval should be limited to major referral centers which have demonstrated full utilization of the first unit as well as a high level of clinical demand exceeding the capacity of the first unit. This approach should: a) Insure efficient use of space and technical, clerical, and professional personnel who have been committed to C.T.; and b) Diminish the effect of "downtime" on the care of critically ill patients since at least one unit should be operating at all times.

VI. Provisions for Adequate Access to Ambulatory CT

A. Hospitals should be prepared to provide the maximum use of the scanner on an ambulatory basis except on those occasions where the health of the patient requires hospitalization. Hospital utilization committees should review scanner use to ensure there are not inappropriate admissions solely for the purpose of utilization of the scanner.

B. The applicant shall provide the CHHC with such reports and information necessary to assess compliance.

C. In view of the major commitment requested of hospitals sponsoring computerized tomography, it is recommended that, at present, applicants other than active hospitals (see item II) be assigned very low priority. Should any non-hospital based units apply, they would have to meet the same guidelines as hospital based providers.

Body Scanners

The usefulness and needs of C.T. body scanning are less well established than for head scanning. At least initially, applications of C.T. units to be used totally or predominantly for body scanning should be approved only for major teaching centers. Applicants should state the expected proportion of head and body use for at least the first year of operation. Moreover, since the efficacy of C.T. body scanning has not been established, applications should only be approved for institutions capable and willing to contribute to the literature regarding body scanners.

Commentary

CAT Health planning

As can be seen by the preceding report, there is increasing interest over the role of health planning[5-7] and growing controversy over the jurisdiction of the health care planners. Recent health planning decisions regarding hospital rates, outpatient facilities, and purchase of C.T. equipment have sharply raised the question: "Who is responsible for health planning in Connecticut?" In 1973, the General Assembly created the State Commission on Hospitals and Health Care (CHHC). It is one of four that have been established in the U.S., and is the only state (except Hawaii) extending control over major medical equipment installed in private practice.

It is interesting to reflect on how this planning agency came to regulate C.T. acquisition. The Social Security Act of 1972 gave individual states some control over capital expenditures in health services and facilities. An amendment to that act states that if a health care facility is to be reimbursed for depreciation of capital expenditures under Title 5 (maternal and child health), or Title 18 (Medicare), or Title 19 (Medicaid), or if it relates to a significant change in clinical services, then the facility must present a statement of need for review. Therefore, the CHHC must review and recommend to the Secretary of Health, Education and Welfare that a project be either approved or disapproved for reimbursement of services under these titles. Furthermore, the state is divided into Health System Agencies (HSA) with jurisdiction over C.T. purchases by hospitals in its area. These reviewing agencies must evaluate at least four areas: 1) need; 2) manpower; 3) financial feasibility; and 4) cost containment on improved quality of care.

While high level medical care for every citizen is an expectation of our society, concern about rising cost and widespread availability of health care has developed. This has led to laws and regulations that are affecting the introduction of computerized tomography before its full medical promise has been defined.[8-10] Critics of C.T. health planning point out that at this time, there is no way to predict the need for C.T. services and therefore, C.T. planning standards, criteria, and guidelines are premature.

The evolution of this legislation has been to remove from the jurisdiction of the historical health care providers (physicians) many of the decisions related to the provision and delivery of health care. This has now resulted in a bipolar situation; on one side, the medical personnel, and on the other, the new bureaucratic agencies. On the medical side, there is the frustrated recognition of substantial loss of control over their profession; while on the other side is the public concern that institutions and other facilities must be financially effective and productive. The real issue is the lack of sufficient funds to maintain the rate of technological expansion which took place in the '60's. With the health care field rapidly approaching 9% of the gross national product, we must budget the funds we allocate for health care.

The Paradox

In many areas, restrictive decisions imposed by health planners on hospital acquisition have paradoxically resulted in a rapid expansion of computerized tomography in private settings. In almost all states, private acquisition of C.T. equipment is outside of the jurisdiction of the health regulatory agency. However, in Connecticut it is the opinion of the state Attorney General that existing legislation extends the jurisdiction of CHHC over private purchases. Leverage for control of the private sector is through influence over Blue Shield, Blue Cross, Medicaid, Medicare and other third party payers. By refusing reimbursement for patients seen in non-certificate of need facilities, the health regulatory agency thereby extends authority over the non-hospital environment. Unfortunately, this approach limits expansion of the private sector and reduces competition with the hospitals. This could result in the unnecessary hospitalization of patients whose diagnostic work-up could otherwise be carried out more economically on an out-patient basis. Contributing to this problem are certain insurance policies which cover diagnostic studies on an "in-patient only basis." These studies could be done just as well and at a lower cost on an "out-patient" basis. For example, the pneumoencephalogram (PEG) which required a 2-3 day hospitalization and was painful and dangerous has essentially been eliminated by C.T. with an immediate saving of over $500 per case.

Where From Here?

The expansion of government health planning suggests that it may further invade the area of medical practice. There is bureaucratic interest in determining whether equipment is being used efficaciously. There is bureaucratic interest in the type of patients studied, the type of diseases investigated, as well as the types of physicians utilizing the equipment. Research funding is being directed to determine which type of diagnostic modality is most cost efficient and where these units shall be placed. Clearly, only a limited number of C.T. units will be initially installed. This restricted distribution of medical technology will influence the referral pattern in these regions. Specialists whose practice relies heavily on the availability of this technology will gravitate to those centers which provide this equipment. With them will come their patients and an imposed redistribution of specialized talent and capability will emerge.

Now this may not be an undesirable consequence. It is clear that there is duplication of facilities and services in many communities. Several cities have two or more nearby hospitals serving the same population. In some instances, competition and pride have resulted in expensive, underutilized, duplicate services. Clearly this is not in the best interests of the community which ultimately must pick up the cost. In several instances, attempts to bring in outside consultants to review the needs of the community and special abilities of the hospitals have failed to produce significant centralization.

Because C.T. is an ultra expensive new technology, it has become a focal point for these issues. It is clear that every hospital in Connecticut does *not* need C.T. at this time. Hopefully, the imposed need for collaborative programs for C.T. usage between nearby hospitals will lead to a greater spirit of cooperation and a more efficient utilization of the health care dollar.

Efficiency is also needed at the administrative level. Rapid increases in the number of administrative and bureaucratic personnel have saddled the patient with an enormous indirect cost. Evans[11] in his economic analysis of C.T. costs, allocated 50% of direct costs for indirect charges. This is clearly excessive!

Physicians' Territorial Imperatives

The progressive escalation of medical costs has invited outside review and programs which control the growth of medical care. This has restricted the freedom of the medical profession to the point where there is evidence of a grass roots reaction by the profession.[12,13] In these well-intended medical programs, there are at least two areas of endangered turf. The first is the more general, and challenges the entire health care field with the question: "Should the medical profession determine and control the health care system?" During the last twenty years, there has been progressive erosion of the medical profession's leadership in this area. It is easy to excuse our non-involvement in politics and government affairs by our primary involvement in patient service and the clinical demands of our profession. As a result of physician apathy, other non-physicians have assumed the leadership we have abdicted and have developed legislation, controls, and restrictive regulations which now determine the dimensions of our practice. The C.T. issue indicates we have lost much of our freedom to select and purchase equipment. Charges for professional services are regulated, and often the hiring and firing and salary structure of our personnel are to a large extent out of our hands. In as much as our constituency are our patients (the public), it is time we offered our constituency a leadership choice. Either the medical profession leads from the front and actively participates in health planning, or we should quit complaining from the rear and let others interested in assuming the responsibility do the job.

I mentioned that there were two turfs endangered. The second is within the profession. The advent of new technology has developed capabilities which do not fit into the historical specialty pattern. C.T. is clearly radiology technology, yet provides such innovative service to neurology and neurosurgery that there appears to be an overlap. This has resulted in competition for the new turf. Radiology has been the beneficiary of numerous technological advances in the last few decades as outgrowths of the accelerated technology of our time. Computerized tomography is the latest example of this technology. It is time that radiologists recognize the broader aspects of their discipline. The specialty is the diagnostic interpretation of images. And while its historical roots are images generated from the X-ray tube, the basic radiological training is the recognition of the patterns of disease. Whether these images are created using the X-ray tube, isotopes, ultrasound, thermography, holography, or any other images generating source is immaterial.

During this time of expensive, technological advances, radiologists must provide health planning leadership to insure that the limited public resources are well spent. Moreover, critical judgement and clinical research is needed to properly direct the diagnostic work-up to the safest, most cost effective series of tests.

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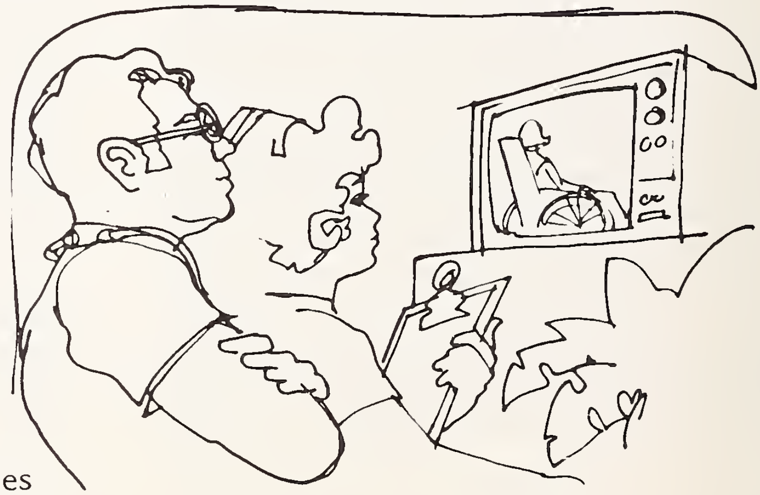

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Joseph Lister: Innovation and Insurgency in Surgery

Ira S. Goldenberg, M.D.

The attainments of surgery as we know them today are the result of diligent effort by numerous physicians of decades past. One of the greatest among these was Joseph Lister who contributed so much that revolutionized the practice of surgery.

Lister was born on April 5, 1827, in Plaistow, now a part of greater London, and grew up with all of the advantages of a happy and prosperous home life. He was well-grounded in the classics and mathematics at school, but early demonstrated an inclination toward natural sciences and while quite young, decided upon a career in medicine. At eight years of age, he was able accurately to draw pictures of small animals and by fourteen years of age he was preparing and mounting skillfully their skeletons. In 1844, at the age of sixteen, Lister entered University College in London from which he graduated three years later. This was an era of primitive medicine by modern standards and research was an almost unknown pursuit. Physician training consisted of relatively few formal classes and a great deal of personal contact with older physicians who passed on all they knew to their students. This was the environment in which Lister studied at the University of London and in 1853 he was awarded the degree of Bachelor of Medicine.

A keen student of medicine with an inquiring mind, Lister published his first research paper after extensive work on the contractile tissue of the iris of the eye during which he studied many species of animals and preserved specimens of human eyes. He recognized the need for physiological study in animals as a prelude to understanding health and disease in man—a scientific approach entirely new in his era.

Lister said:

> "The first rational step towards the prevention or cure of disease is to know its cause; and it is impossible to overestimate the practical value of researches. . . ."

After graduation Lister was ready to practice surgery and he accepted a post in Edinburgh as resident house surgeon to James Syme, Professor of Clinical Surgery at the University. Within a year he was promoted to fill a vacancy at a higher level on the staff of the Royal Infirmary in Edinburgh. This new position included teaching responsibilities at the Royal College of Surgeons and he continued his research. Lister was an aggressive investigator in the utilization of living animals for scientific observation and he made some profound observations on the phenomena of inflammation and blood flow in the vessels of the transparent web of the frog's foot. Lectures to his students were based on these investigations and he was a most impressive teacher describing the experiment.

> "Having fixed a young frog upon a plate of glass on the stage of a microscope at an angle of 45 degrees, one of the webs being extended in the field of view, I watched the effect of throwing a few drops of warm water upon the web. . . . I could at once observe the result. This filled me with astonishment, and at first I could not understand what I saw. All appearance of blood vessels—arteries, capillaries, and veins—had disappeared . . .I found the first effect on the stiumulus was a state of extreme constriction of the arterioles . . .Thus was swept away at one stroke the latest theory upon the subject."

In 1856, Lister became an assistant surgeon and married Professor Syme's eldest daughter. Three years later the Chair of Surgery at the University of Glasgow became available and Lister was chosen to fill the position.

It was during the next decade, while in Glasgow, that Lister made his brilliant observations on wound infection and developed the antiseptic method which was to change the whole system of surgical practice. Infection of surgical wounds had been the usual course of events for centuries and elective operations were seldom performed because of the tremendous risk involved. Lister felt that something could be done about this and he searched for answers in the laboratory which he then applied to his patients. Pasteur had laid the groundwork for advances in this field by describing bacteria and how they caused fermentation of wine and Lister now postulated that such microorganisms could cause the putrefaction so commonly seen in surgical wounds. He was thus compelled to explore bacteriology and published several studies on this subject. Lister was certain that there was some substance that could be applied to the wounds to prevent pus from developing and after much testing he chose carbolic acid solution and it worked! From this start, he developed what he called an "antiseptic method for wound management," the basic principles of which are still practiced in 1976 to keep surgical wounds free of infection.

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The rate of fatal wound infections was immediately and dramatically reduced on Lister's wards at the Glasgow Royal Infirmary and he next sought to spread his gospel. At first, he met with stubborn resistance from his physician colleagues because his theory was so radical, but converts soon grew in number and one of the most notable advances of surgical practice was established.

During this era Lister also made other contributions to surgical practice, in anesthesia, instrumentation and especially suture materials. Wound closure technique of Lister's time always seemed to aggravate any infection that developed in wounds and he determined to devise a better material than was currently available. Lister described the first use of specially prepared catgut suture made from sheep intestine in a letter written many years later to Professor W. W. Keen of the Jefferson Medical College in Philadelphia. Lister's views about animal experimentation were sought by Professor Keen during a period when laws to control vivisection were being discussed in America. The letter stated:

> "In the course of my antiseptic work at a later period I frequently had recourse to experiment on animals. One of these occurs to me which yielded particularly valuable results . . .It had reference to the behaviour of a thread composed of animal tissue applied antiseptically for tying an arterial trunk. I had prepared a ligature of such material at a house where I was spending a few days at a distance from home; and it occurred to me to test it upon the carotid artery of a calf. Acting on the spur of the moment, I procured the needful animal at a neighboring market; a lay friend gave chloroform (anesthesia) and another assisted at the operation. Four weeks later the calf was killed and its neck was sent to me. On my dissecting it, the beautiful truth was revealed that the dead material of the thread instead of being thrown off by suppuration, had been replaced under the new aseptic conditions, by a firm ring of living fibrous tissue, the old dangers of such an operation being completely obviated."

After several more animal experiments, Lister felt secure in stating:

> "Thus far experience had proved precisely in accordance with expectation, so that I felt justified in carrying a similar practice into human surgery."

This momentous development laid the foundations for the modern use of all catgut suture material, a most valuable part of the surgeon's equipment.

In 1869, Lister returned to Edinburgh to occupy the Chair of Clinical Surgery when his father-in-law, Professor Syme, became incapacitated. Not long afterward he was requested to treat Queen Victoria who was staying at Balmoral Castle not far from the Scottish capital. She had an infection of the axilla and needed surgical care. Lister opened the abscess and placed a rubber drain into the wound, the first use in Britain of this device which is still an important tool in surgery.

During the early years of Victoria's reign, as for many decades before, animal experimentation had not been hampered by those opposed to vivisection. Research valuable to the advancement of medicine had been done in animals by such notables as Harvey, Hall and Jenner who later applied their observations to the care of patients. Disease and its attendant miseries had been alleviated by facts learned during these studies which were controlled by an act of Parliament. This law, Martin's Act, dealt with the prevention of cruelty to domestic animals. For many years the Society for the Prevention of Cruelty to Animals employed detectives to track down violators of the Act, but this resulted in only one prosecution and that failed of conviction.

In 1874, however, an incident occurred at the meeting of the British Medical Association which raised the feelings of the general public and of many physicians to a fever pitch. A French physician had presented experimental data at the meeting concerning the physiological effects of absinthe and alcohol when injected into the circulation of living animals. Though this was neither a cruel nor an inhuman use of animals the antivivisectionists carried the matter to the press. British authorities could not prosecute the physician because he was a foreigner and soon the newspapers were deluged with shocking details of experiments reported from laboratories outside Britain with insinuations that the same tortures were commonplace at home.

Public hue and cry was so loud that a Royal Commission was appointed in 1875 to investigate the whole matter of animal experimentation. A report followed which found British physicians not guilty of cruelty, but made recommendations to place control of vivisection under the Secretary of State who would license qualified individuals to use living animals in laboratories. A very restrictive act was proposed in the House of Lords which would have effectively halted all animal experimentation in Britain, but biologists and physicians throughout the country were aroused and were able to modify this effort.

During all this furor, Queen Victoria was shocked to learn of alleged cruelties to animals in laboratories and asked Lister to make a public declaration against the practice of using animals for research. Deeply involved in animal experimentation himself and aware of the enormous importance of such studies to the benefit of mankind, he could not consent. He penned a letter to Her Majesty in which he said that more pain was inflicted upon a hunted stag or hare or upon animals fattened for human food than upon any animal in a laboratory. Victoria did not alter her stand and the licensing act was ultimately passed by Parliament.

By the time Lister was fifty his antiseptic method was widely acclaimed and accepted all over the civilized world. In 1877, he accepted appointment to the Chair of Surgery at King's College in London, where he remained for the rest of his professional career. He continued to add new dimensions to the practice of surgery and honors were continually bestowed upon him—establishment of the Lister Institute of Preventive Medicine in London in 1891, elevation to the peerage in 1897 (he was the first physician to be so honored), freedom of the cities of Edinburgh in 1898, of London in 1907 and of Glasgow in 1908. Even his declining years were filled with alert and profitable observations and his last publication appeared in 1909 when he was eighty-two years old. Not long afterward his health began to fail and Lister, the innovator and insurgent, died on February 10, 1912, his place in history secure.

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Measuring blood pressure

The need for a standard routine for measuring the blood pressure has been emphasised recently[1] and is clearly important in the diagnosis and assessment of hypertension and in supervising treatment when more than one observer may record the findings. Differences in the methods used in different countries have also given rise to problems in evaluation of research studies.[2]

Mercury manometers are to be preferred to anaeroid gauges, which, though less expensive and in some ways more convenient, need frequent checks to avoid error. Whenever possible extrinsic factors tending to produce a rise in pressure should be avoided. The subject should be warm and relaxed. The blood pressure will fall to very low levels in conditions of complete relaxation, but measuring the basal pressure after a long rest[3] is usually impracticable, and the usual criteria of hypertension will not then be applicable—so that the problem of assessment is more difficult. As a practical compromise the patient should rest semirecumbent for several minutes without smoking before the blood pressure is taken.

The size of cuff to be used has given rise to some debate. Ideally, the cuff should have a width 40% of the circumference of the arm to produce even occlusion of the brachial artery—too narrow a cuff on a fat arm gives a falsely high reading and vice versa. This is an important factor to remember, for if an adult cuff is used on a child clinically significant hypertension may be missed. Cuff length is also important: the inflatable bag should surround the whole arm, for if it is short unduly high readings will be obtained.[4] The usual standard cuff of 12 x 23 cm is too short for this, and further assessment of a 12 x 35 cm cuff is proposed, though the suggestion that this size is the correct standard[1] seems unlikely to be followed widely in Britain, and we must accept that there is generally a small error.

Blood pressure is measured by auscultation of the Karotkoff sounds as the pressure in the cuff falls. The cuff should fit snugly, since pain from too tight a cuff will provoke a rise in pressure. Prolonged veneous occlusion from repeated inflation may cause error. The arm should rest at heart level. Preliminary assessment of the systolic pressure by palpation of the radial artery will allow the cuff pressure to be raised to 30 mm Hg above the systolic pressure before auscultation begins. Cuff pressure should then be reduced by 2-3 mm Hg with each beat, and the appearance of the Karotkoff sounds (phase 1) gives the systolic blood pressure. The best diastolic value is obtained as the Karotkoff sounds become muffled (phase IV); this criterion is now recommended[5] even in the USA, but continued use of the previously recommended criterion of disappearance of the sounds (phase V) still causes some confusion.[2]

Unconscious digital preference (rounding off the reading to the nearest 10 mm Hg) should be avoided, but great accuracy is not possible as the pressure in the cuff falls between pulses and the blood pressure varies with respiration; adjustment to the nearest 5 mm Hg seems reasonable. (For the time being no conversion to SI units should be made— kilopascals are reserved for direct measurements of arterial pressure.) For epidemiological studies and other research a covered sphygmomanometer is generally recommended so that the observer does not know the pressure recorded as the measurement is made.[6]

British Medical Journal, November, 1975.

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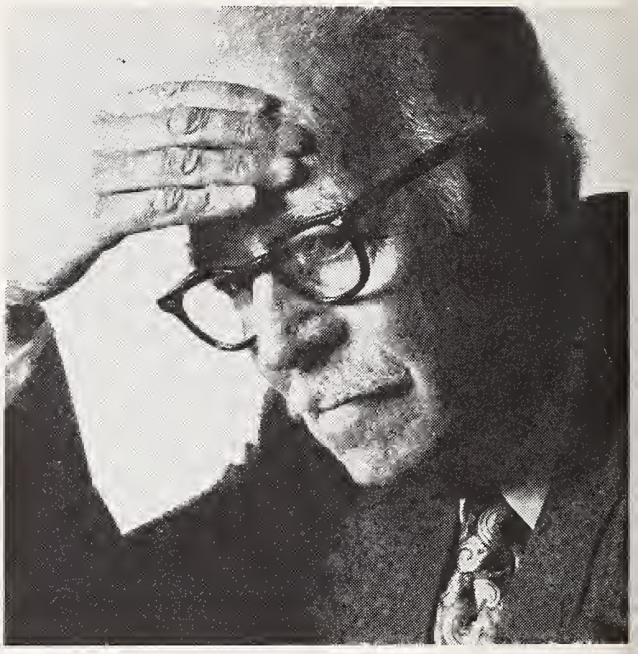

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PRECAUTIONS: Use with caution in patients with glaucoma. Tolerance to this drug, and cross-tolerance to other nitrates and nitrites may occur.

ADVERSE REACTIONS: Cutaneous vasodilation with flushing. Headache may commonly occur, and may be both severe and persistent. Transient dizziness and weakness, in addition to other signs of cerebral ischemia associated with postural hypotension may occasionally be seen. ISO-BID can act as a physiological antagonist to norepinephrine, histamine, acetylcholine and many other medications. An occasional patient may show marked sensitivity to the hypotensive effects of nitrite; severe responses (nausea, vomiting, weakness, restlessness, pallor, excessive sweating and collapse) can occur, even with the usual therapeutic dosage; alcohol may enhance this effect. A drug rash and/or exfoliative dermatitis is occasionally seen.

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The Depressive Illnesses: A Research Overview

Bertram S. Brown, M.D.

Depression and terms synonymous to it predate the formal medical literature even of the ancient Greeks. What is essentially a self-report inventory of classic clinical depression can be found in the Old Testament's Book of Job. In the intervening years our understanding of the etiology, diagnosis, epidemiology, and effective therapies have increased both in sophistication and complexity; still, the only truly common point of agreement is that the disorder is ubiquitous, a part of the human condition, ranging from a normal mood state to severe illness.

Even today, the concept of depression is commonly used to encompass this range of conditions, from transient emotional states to a set of identifiable clinical disorders involving several distinct patterns of symptomatology.

In this article, the term "depressive disorders" refers to those conditions recognized by psychiatrists and other mental health professionals as serious enough to warrant professional care.

During any given year, 125,000 people are hospitalized in the United States for depressive symptoms while another 200,000 receive outpatient care. These represent but the tip of the iceberg in terms of the number of people who actually suffer from severe depression. One national survey of psychic distress suggests that 15 percent of a random sample of American adults aged 18 to 74 may have significant depressive features at any one time.[2]

Of particular concern to the medical practitioner are the thousands who suffer diverse physical symptoms and psychosomatic disorders in whom an underlying depression may often go unrecognized.

By any measure of human suffering, the cost of depression is enormous. It may sweep over a person in the wake of a life crisis, disappearing quickly, or overcoming that person for months or years. It may arise slowly or suddenly from within, giving rise to unexplained but cruelly devastating changes in personality and behavior. Depression forms the psychological backdrop for most of the more than 23,000 suicides reported each year in the United States.

Over the past three decades, the National Institute of Mental Health has supported research on depression through its Extramural (Clinical Research, Psychopharmacology, and Mental Health Emergencies) Programs and Intramural Laboratory Research Programs.

In response to an upsurge of interest and research activity, the Clinical Research Branch, in 1969, convened a national conference on the psychobiology of the depressive disorders. Major emphasis was given to clarifying significant trends, identifying the impediments to more rapid research progress, and determining promising new directions for future investigations.[3]

The following year, the Branch noted that although currently effective treatments for psychosis are primarily somatic—i.e., electroconvulsive therapy (ECT) and drugs—the burden for therapy for the larger proportion of depressive illnesses coming to the attention of the mental health care system falls squarely upon psychosocial therapeutic modalities. These consist of traditional methods of psychotherapy as well as the newer group milieu and behavior modification therapies. The Branch was cognizant that despite the urgent need for new treatment methods, there existed a relative paucity of basic research on the psychosocial aspects of depression.

To facilitate an understanding of what appeared to be an impasse in a critical area of research, the Clinical Research Branch sponsored a second workshop, this one on the psychology of depression, in October, 1971.[4]

A major product of these conferences was the design and implementation of the NIMH Collaborative Study on Depression. This effort, now with pilot phases completed, is currently actively seeking research leads in the two spheres, biological and psychosocial.

As a result of these and other research activities, the affective disorders today represent one of the most promising and dynamic areas of research in mental health.

Diagnostic categories and criteria, which are becoming increasingly more precise, differentiate between unipolar depression—a condition of recurring episodes of depression—and bipolar depression—a condition of recurring episodes of both depression and mania.

Marked progress also has been made in therapy. In addition to treatment with ECT and antidepressant drugs, unipolar and bipolar patients now can be treated with lithium carbonate, the use of which may become as significant a development as the use of insulin for diabetes. Collectively, existing treatments are effective for approximately 80 percent of the patients experiencing depressive psychoses.

DR. BERTRAM S. BROWN, Director of HEW's National Institute of Mental Health. This article is excerpted in large part from *Research in the Service of Mental Health*, the report of the NIMH Research Task Force.[1]

Developing a More Accurate Diagnosis

The concept of unipolar and bipolar affective illness represents a major advance. Unlike previously proposed diagnostic categories which were rather unsystematic and had no demonstrated etiological significance, this new differentiation is supported by a variety of factors. These include: (a) genetic studies showing that the relatives of manic depressive patients have an increased incidence of manic illness while the relatives of depressive patients have a lower incidence of manic illness; (b) a difference in the characteristic time of onset—the age at onset biopolar illness peaks at 26 years, while that of unipolar illness peaks at 45 years; and (c) a difference in the response to lithium. Consequently, more homogenous patient samples are available for research. Nevertheless, accurate distinction among various types of unipolar illness and between "normal" and clinical depression remains difficult.

Development of standardized criteria was emphasized during pilot stages of the Institute's Collaborative Depression Study. As a result, NIMH scientists and grant-supported investigators in five locations currently engaged in the psychobiological phase of the program can be certain, for the first time, of working with patient samples reliably comparable to those of their colleagues.[5]

As a further refinement in diagnosis, two general types of unipolar depressions have been hypothesized: "pure depressive disease" and "depression spectrum disease." The typical patient with pure depressive disease is a male whose illness starts after the age of 40, and in whose family are equal numbers of male and female relatives who also suffer from depression. The typical patient with depression spectrum disease is a female whose illness developed before the age of 40, and in whose family more depression is seen in female relatives than in males. However, males in her family show increased levels of alcoholism and sociopathy.

Depression appears to be an important factor in triggering many physical illnesses as well as in determining their outcome. "Giving up" or "having given up" may lead to death. Evidence suggests that patients who suffer from a depressive illness after a heart attack, for instance, develop a large number of physical complications during the ensuing recovery period that not only prolong convalescence but increase the likelihood of a fatal outcome. Other research has revealed that, despite a high incidence of severe depression among patients hospitalized for medical illness, these depressions are mainly unrecognized—and thus left untreated—by attending medical personnel.

Additional evidence of underdiagnosis has emerged in a cross-national study of diagnostic practices in the United States and England, which pointed up differences in patient sampling, methods of diagnosis, and concepts of depression and schizophrenia between the two countries.

Unraveling the Genetic Factor

Research is providing increasing evidence that certain affective disorders have a significant genetic basis. The risk of developing bipolar illness is .7 percent in the general population; it rises to 8, 9, and 11 percent for first-degree relatives—parents, siblings, and children, respectively—of manic-depressives. Twin studies have reported monozygotic concordance rates that range between 50 and 100 percent, and dizygotic rates of 0 to 40 percent. As noted earlier, these figures are approximately similar to those determined for illnesses such as diabetes, congenital pyloric stenosis, and cleft palate, in which a genetic etiology is generally accepted. However, the findings do not preclude the possibility that the disease is transmitted in whole or in part, in some subjects, through upbringing. This question can be resolved only through adoptive and other appropriate studies. Ongoing genetic studies are attempting to demonstrate a specific mode of transmission and/or linkage with a known genetic marker.

In one study, patients who for the most part had two generations of affective illness in their families were considered to be a homogeneous group; the findings suggested a predominant X-linked transmission, since manic-depression appeared to be transmitted from mother to son. The data indicated that the locus for manic-depressive illness is linked to the loci for red-green color blindness on the X chromosome. Possible linkage with the Xga blood group on the same chromosome was also indicated.

Biochemical and Physiological Factors

The two prevailing theories about the psychobiology of depression include the "catecholamine" and the "serotonin" hypotheses. At present, the former is more widely accepted and is the focal point of more studies.

The Catecholamine Hypothesis

Historically, American experimenters have concentrated largely on the role of the catecholamines, while European and British studies have dealt primarily with the indoleamines, such as serotonin. According to the catecholamine theory of affective disorders, depression results from a functional deficit of the transmitters norepinephrine and/or dopamine at brain synapses, while mania results from an oversupply of these transmitters. This theory originated with evidence that reserpine—which was sometimes prescribed in large doses for hypertension and which was known to decrease the amount of catecholamines in the brain—was often associated with severe depression. Furthermore, the two groups of effective antidepressant compounds both increase functional brain catecholamines, though by different mechanisms: the tricyclic compounds inhibit the reuptake of catecholamines into the presynaptic nerve endings; the monoamine oxidase inhibitors reduce the activity of the enzyme which is involved in the degradation of catecholamines, thus making more catecholamines available. The data that implicate the catecholamines in triggering manic episodes are particularly convincing, since they are supported by studies of transmitter metabolites in the urine and cerebrospinal fluid of manic patients, as well as by studies of the effects of lithium.

The Serotonin Hypothesis

Here again, the association of reserpine with depression led researchers to suggest that this might be caused by a decrease in functional brain serotonin, since reserpine decreases the amount of serotonin (an indoleamine) available at brain synapses, as well as the amount of catecholamines. According to this theory, depression is associated with a deficit of serotonin, and mania by an excess. The evidence is somewhat more convincing for depression, since some precursors of serotonin have been reported to relieve depression in some patients. Furthermore, there have been suspiciously low levels of 5-hydroxyindoleacetic acid (5-HIAA), the major breakdown product of serotonin, in the cerebrospinal fluid of depressed patients, as well as in the brain tissue of patients who committed suicide.

Electrolyte Studies

Possible changes in water and electrolyte metabolism have been reported during mood disturbances. The uptake of biogenic amines into the cell is dependent on the sodium and potassium gradients across the cell membranes. This, plus the fact that lithium influences mood disorders, suggests that electrolyte phenomena may be related to affective illness.

Sleep Studies

Depressed people suffer from insomnia and other sleep disturbances. Their sleep problems can even serve as a measure of their illness. Psychotic patients suffer from two to three times the sleep reduction of nonpsychotic depressed patients. The acute phase of illness is marked by the most conspicuous abbreviation of total sleep, reduction of deeper stages of sleep, and the lowest percentage of REM sleep. Researchers are now trying to find out whether patients who suffer recurrent episodes of depression or manic-depression have any abnormalities in their sleep patterns before the manifestations of their recurring illness.

Longitudinal Studies of Individual Patients

Because it is so difficult to find truly homogeneous subgroups in the affective diseases, researchers have learned to study individuals and use them as their own controls through different stages of their sickness and health, both with and without medication. The establishment of adequately staffed metabolic research wards in various settings has allowed investigators to observe individual patients more closely, and to correlate their behavior with a wide variety of biochemical changes.

Developing New Psychological Models of Depression

New experimental and theoretical models have evolved in the field of psychology that show great promise in unraveling the causes and nature of depression. These models, discussed below, together with the traditional psychopathological and psychodynamic models, have broadened research in the whole area.

Behavioral and Cognitive Models

Many psychologists are currently less interested in what the patient says and thinks, and more in how he behaves and how the environment reinforces or negates this behavior. This movement is in accord with the strong behavioristic trend and also with findings of research on learning and conditioning. It has led to several new models that try to explain and define the various states of depression. Moreover, by adopting a naturalistic approach to the problem of depression, patients can be studied in their day-to-day relations in the community.

Other research has centered on the "cognitive" aspects of depression. One investigator holds that patients experience sadness, loss of motivation, and suicidal wishes because their thinking is disturbed, and not vice versa, as most psychologists traditionally have believed. In depression, he believes, a "negative set" takes command of the organism. Both in their dreams and in their waking fantasies, depressed people have a negative view of their self, of the outside world, and of the future. Depression is a cognitive disorder, this investigator says, and, therefore, any experience of success that boosts the patients' unrealistically low self concept should lift their depressed mood.

Animal Models

Other researchers believe that some of the circumstances in which depressions arise can be reproduced in animals. Even if it proves impossible to develop an animal model for schizophrenia or thought disorder, they hold, it may be possible to develop one for depression, since mood alterations could have developed very early on the phylogenetic scale. Investigators supported by NIMH have attempted to produce depression in monkeys by separating infants from their mothers; others have used drugs that deplete brain catecholamines. Pioneer work by various investigators have produced animals who seem uninterested in their environment, who have the appearance of being depressed, and who behave in a manner that could be interpreted as depressed. The complexity of the problem, however, is reflected in the fact that there are clear species differences. Recently, one researcher has developed an animal model of depression based on the concept of "learned helplessness." The model suggests that early experience with persistent and uncontrollable trauma leads to the development of a passive, helpless approach to dealing with frustration in later life.

Research has made considerable inroads in recent years toward a fuller understanding of the depressive disorders; still, many unanswered questions remain:

Antidepressant drugs generally do not relieve symptoms until several weeks after treatment begins; the reason for this delay is not yet understood.

Though we know something of a few neurotransmitters, there are many other active neurotransmitters that we have not identified.

We do not fully understand the effects of hormones on the manufacture and release of neurotransmitters.

Dopamine and serotonin are affected by some psychoactive drugs and may be involved in various subtypes of depression; however, we have not traced their roles in the illness.

We do not know the exact relationship between mania and depression—whether they are chemically similar or opposite conditions.

We know that experiential and environmental factors influence the effectiveness of drug treatment for depression, but we are not able to explicate how.

In view of the magnitude of the depressive disorders as a public health problem as well as the cost of the disorders—by economic and human measures—basic and clinical research on this condition warrants high priority both within the research programs of the NIMH and the broader psychiatric research establishment.

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Also available as a brief reference for patients, *Learning About the Depressive Illnesses*, (DHEW Publication No. (HSM) 73-9134). Single, complimentary copies from NIMH Public Inquiries Section, Room 505, 11400 Rockville Pike, Rockville, Maryland 20852.

Perspectives on Professional Education

William S. Griffith, Ph.D.

Seventeen years ago Dr. John C. Leonard, the man whose contributions to medical education we are honoring today, attended a seminar in Beverly, Massachusetts, dealing with medical education. At that seminar Dr. Leonard made this statement:

> I am just making a prediction that I feel is an evolutionary must, that it won't be more than five to ten years (the impossible optimist within me says five years and the quiet voice in the background says ten years) when general practitioners, family doctors and specialists must pass a re-examination, let us say every five years and perhaps later on, that will be every two years. It may be administered obviously and should be administered by the AMA. . . . What I am trying to say is that we must police our own organization and continuing education is one of the forms of policing ourselves. Each M.D. sitting in this audience is well aware that there are numerous physicians practicing in your and our areas who haven't done a single bit of continuing medical education or postgraduate work since they received their medical school diplomas and had their internships, ten, twenty, thirty, forty years previously. This obviously is something that, if we as a profession, are not willing to correct, will be corrected for us by federal regulations and I think it is high time that we did it instead of having it forced upon us. (4:72-73).

The Voices of Critics

Dr. Leonard's quiet voice was far more optimistic than he realized. Nevertheless the public scrutiny and criticism of the medical profession which he anticipated is upon us. On the one hand malpractice suits constitute a direct, expensive assault on the medical profession. Indirectly the attack is being waged by small-bore critics and is being aimed at a public which is not well prepared to assess the validity of the arguments. Just recently we have seen the publication of *Medical Nemesis: The Expropriation of Health* by Ivan Illich, *The End of Medicine* by Rick J. Carlson, and *The Great American Medicine Show* by Spencer Klaw. These authors castigate physicians, hospitals and private health insurance as not serving the public welfare and being in need of sweeping changes.

Without denying the existence of iatrogenic disease, members of the medical profession might very well give additional consideration to the claims of poor practice which are being made with increasing frequency.

Medical Perspectives on Professional Education

The Committee on Goals and Priorities of the National Board of Medical Examiners stated, in 1973, that

> Until recently, the maintenance of competence by the practicing physician has been a personal and voluntary responsibility of each individual, with no major forces mandating either his continued educational efforts or an assessment of his competence beyond completion of formal medical education. Now, however, existing pressures for assuring the quality and effectiveness of patient care have created an awareness of the need to assure the continued competence of the practicing physician who provides health care to the public. (21:37-38)

The Committee then presented an unemotional criticism of each of the array of continuing medical education programs, stating:

> Continuing professional education in the form of traditional information-oriented courses has not been shown to improve either the quality of the physician's practice or the standards of practice in the community. Furthermore, it is generally accepted that knowledge alone does not guarantee its effective translation into practice. (21:55-56)

Williamson,[24] Lewis and Hassanein (17:254), Miller (20:321), and Brown and Uhl (6:1662), all of whom recognize the need for maintaining the physician's competence, are in general agreement that despite the proliferation of continuing education opportunities there is a distressing lack of evidence that current efforts are worth the time and money they require. Nevertheless they argue for improvements in the programs rather than their elimination.

Mandatory Continuing Education

Other less moderate authors have adopted a more aggressive and somewhat radical rhetoric. Last August Libby, Weinswig, and Kirk wrote an article which attracted quite a bit of attention. You no doubt recall reading it. The title was "Help Stamp out Mandatory Continuing Education."[18] In the article the authors presented what may appear to many observers of continuing medical education as a caricature of current practice. They said:

> Mandatory continuing education programs for health professionals, as they are now administered, are predictable failures. Such programs may destroy the will to learn. Objective studies indicate that current continuing education programs do not influence the methods of practice of the health professional. Current programs are primarily pedagogical, reflecting the philosophies and techniques of child-youth education. . . . Adults may be coerced into

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John Leonard Lecture presented to the John C. Leonard Society, Hartford Hospital, Hartford, May 14, 1976.

attendance, but learning and subsequent application of knowledge may not be forced. (18:797)

They then presented four characteristics of university based continuing education programs which they believed account for the poor results reported for such programs:

1. The educational purpose is viewed as the transmittal of information.
2. The programs reflect technical presentations by subject matter experts.
3. The programs are primarily of a lecture or panel discussion format.
4. Active formalized clientele involvement in the program or in need determination is limited. (18:798)

After noting that "it is a cruel hoax to purport that present continuing education programs will update the practitioner's knowledge and materially improve the quality of his practice," (18:797) they predicted that "[Mandatory continuing education] will not impress our patient population or appease the politicans for long and will inevitably alienate the health practitioner from all forms of continuing education" (18:799). Williamson also documented the lack of correlation between participation in continuing education and competence.[24]

On the editorial pages of the same issue of the *Journal of the American Medical Association* as the previous article appeared there is a rejoinder which states that

> The American Medical Association (AMA) has endorsed the concept of voluntary continuing medical education. The AMA position is based on the concept that it is the individual and personal requirement of the members of the profession of medicine to retain their professional competence.[19]

In his editorial, however, Mangun appears to favor mandatory continuing education, for he argues:

> The basis for stamping out mandatory continuing education should be documented evidence that all physicians are carrying on an adequate program of continuing medical education on a voluntary basis.[19]

Forni, who is professor and dean of the School of Nursing at Southern Illinois University, argues against mandatory continuing education on the grounds that it is simply not the best way of ensuring continuing competence. She favors the use of nursing audits, peer review, and problem-oriented nursing records. (12:38). Forni favors the position on continuing education which has been taken by the Registered Nurses' Association of British Columbia which is as follows:

> At the present time, however, the Association does not support the position that evidence of participation in continuing education be a condition for re-registration for the following reasons:
>
> 1. Participation in continuing education is one of many ways of maintaining competence.
>
> 2. Registration on the basis of documented participation in continuing education may mislead both the public and nursing practitioners by implying that those who are registered are competent and that those who are unable to document participation in continuing education are incompetent.
>
> 3. Since nurses participate in all aspects and at all levels of health care, it would be extremely difficult to define the learning needs of each nurse and to assure access to appropriate continuing education.
>
> 4. There currently are not adequate resources (money, materials, prepared instructional personnel) in British Columbia to provide all practicing nurses with equal access to continuing education opportunities.
>
> 5. Mandatory continuing education would create a demand for continuing education which could foster uncoordinated growth of poorly conceived programs with little likelihood of producing a demonstrable impact on health care. Ultimately this would be detrimental to the system, as the contribution that continuing education can make to promoting competence would be discredited.
>
> 6. . . . accountability for the use of funds . . . demands that resources be invested in the development of more promising approaches to assuring competence than a system requiring that practitioners participate in continuing education. (12:36-37)

Physicians' Awareness of and Concern for Continuing Education

Those who maintain that continuing medical education is a good thing so long as it is not compulsory are aware of a number of problems commonly found where participation is voluntary.

Lewis and Hassanein noted that over a ten year period 43 per cent of the 2090 physicians practicing in Kansas did not take part in continuing education programs offered by the state university. They also found that 7 per cent of all physicians accounted for half of all of the hours of continuing education that were given. (17:254). They concluded in 1970 that "Participation in continuing education apparently depends upon inculcating in the physician a sense of responsibility for self-evaluation and continued restraining since at present there are no external forces to require involvement—let alone learning—in such programs." (17:259). Further they expressed reservations about the ability of content-oriented medical educators to mount successful process-oriented continuing education programs.

Castle and Storey, writing in 1968, criticized continuing medical education because it did not build on sound knowledge of physicians' interests and needs. They propose that

> to improve the quality of patient care, continuing medical education must be oriented to the individual physician's

> practice and must be related to his particular interests and needs. All physicians are interested in learning when they have a need to know and when they are able to get help on their own terms. They want to become more efficient in their practices as well as to learn how to practice better. We know very little about the practical educational needs of the practicing physician and there are few instruments available to assist us or him in diagnosing his needs . . . (8:611)

The Problem of Interests and Needs

In a mistaken attempt to borrow what they believe is sound educational practice some professionals working in continuing education try to build programs entirely on the basis of what their intended learners say they need to learn. But Clute, who evaluated the quality of patient care provided in eastern Canada, found that 22 per cent of the general practitioners observed in Ontario and 56 per cent of the general practitioners observed in Nova Scotia who said they found it not particularly difficult to keep up in medical education were judged to be practicing medicine in an unsatisfactory manner. (17:257). Abrahamson also documents the questionable validity of physicians' self reports of the adequacy of their knowledge. After having administered a pre-test and conducted a continuing education program, and administered a post-test he asked the participants whether they could have answered the questions on the test correctly before taking the course. Ten per cent said "yes" but their papers revealed that they were still giving the wrong answers. (1:627). Accordingly, there is strong evidence that physicians are often unaware of deficiencies in their knowledge and skills, which indicates that planners should not take expressions of professed learning needs as valid indicators of the respondents' level of knowledge or skill.

Castle and Storey warned that "on their own, individuals tend not to express precisely what they need, but rather their interests. A first step, therefore, would seem to be to engage physicians in a dialogue regarding their interests so that a more accurate definition of their needs might become possible." (8:611)

Dysfunctional Aspects of the Education of Physicians

Fourteen years ago Bowers, who was chairman of the Joint Study Committee in Continuing Medical Education, related the education of the physician to his subsequent continuing education:

> "To help the student establish essential habits . . . of continuing self-education" has been enunciated by the AAMC as an objective of under-graduate medical education. All signs indicate that we have done an unsatisfactory job in achieving that objective. A majority of the medical schools offering programs in continuing medical education report that the same very old and very young faces reappear at a majority of their courses. Unfortunately a considerable number of practicing physicians apparently have either little opportunity or little desire to participate in programs of continuing medical education.
>
> Perhaps the medical schools do not inculcate life-long habits of self-education; or perhaps the habits that we inculcate emphasize teaching rather than self-education. It appears that whatever may be the habits that we inculcate, they are not applicable to the educational needs and opportunities of practicing physicians. (10:ix)

Beck also believes that the education of undergraduate and graduate medical students does not prepare them for continuing their education. He says:

> Neither undergraduate nor graduate students are consistently exposed to critical analysis of the validity of diagnostic procedures, the consequences of particular types of therapy, the natural history of disease in treated and untreated states, or the long-term results of particular methods of treatment in given groups of patients. Furthermore, the design of clinical experiments, the problems of statistical analysis, and the understanding of the variables associated with human experimentation are not part of the body of knowledge that the average student takes with him when he has finished his formal training. (3:130-131)

Darely urged that

> education for medicine must move from objectives placing such great emphasis upon the acquisition of information toward objectives more efficiently promoting the ability to select, organize and evaluate information in a way that will stimulate, as well as satisfy, curiosity and also foster the kind of critical perception which the judgments of a learned profession will increasingly require. In this shift of objectives the acquisition of information becomes a means to an end as well as an end in itself and the manner of learning as well as what is learned can receive the proper emphasis. (10:xiv).

The Committee on Professional Education of the American Heart Association reported that "many practicing physicians feel that they are drowning in oceans of nondiscriminatory new information." The Committee further observed that "Undue emphasis has been placed on the goal of bringing new information to the physician. It is more important to help him cultivate his analytical ability and improve his critical judgment." (2:10)

Simpson, in a critical analysis of medical education, concurs with the previously mentioned criticisms of the undue emphasis placed upon factual knowledge and he also posits an explanation:

> The heavy emphasis on factual knowledge in current curricula is, in good part, an artifact due to the existing methods of examination; because they are expedient, they have become at first an aim and then a fetish. A self-per-

petuating cycle has begun; the tests become self confirming, because what they measure best is the special training the candidate has been given to pre-condition them for the experience of being examined.

> A student often may need to know whether a question on, say, lung disease, is being asked by the physiology, pediatrics, pathology or medical department before he can know which correct answer to give. (23:118)

The Practitioners' Perspective

After the physician has completed his undergraduate and graduate training, he is then faced with the task of keeping himself up to date in his practice. Although the reading of journals is often regarded as the most readily available method, Ellis, in his analysis of post graduate medical education, maintains that doctors cannot get the instruction they need from such journals for several reasons:

> No practicing physician has the time to sift through the mass of data for the kinds of helpful knowledge he wants, and few have the background and training to judge the value of scientific presentations. Survey articles, such as the Medical Progress Reports in the New England Journal of Medicine, are helpful, but too often their chief objective appears to be a demonstration of the author's wide acquaintance with the bibliography of the subject rather than a critical attempt to winnow the wheat from the chaff. (11:243-244)

Rates of participation in various forms of continuing education and reasons for what appear to be relatively low rates have been presented by a number of investigators. The American Heart Association estimates that "medical education, apart from practice, stops at the end of house-staff training for from 20 to 70 per cent of physicians." (2:9) The Association also commented that "the Academy of General Practice, with its strong emphasis on continuing education has attracted approximately 20 per cent of the nation's general practitioners" (2:25). The obstacles to keeping abreast for Utah physicians was studied by Castle and Storey who reported the following as the six most important obstacles: Away from family too much; too many patients; what's offered is not what's needed; can't fit it into my schedule; too many meetings; and can't leave patients. (8:613) These reasons are similar to those given by a random sample of American adults who had expressed a positive attitude toward continuing learning: cost; not enough time; don't want to go to school full time; responsibilities at home; and responsibilities on the job. (9:46)

Carp, Peterson and Roelfs also asked participants in continuing education programs why they participate. The percentages of the respondents giving each of the ten most frequently named reasons are shown in Table 1.

Table 1

REASONS GIVEN BY A SAMPLE OF ADULTS FOR PARTICIPATING IN ADULT EDUCATION

Reason	*Percentage Respondents*
1. Become better informed, for personal enjoyment and enrichment	55
2. Curiosity, to learn for the sake of learning	32
3. Meet the requirements of my employer or profession	27
4. Become a happier person	26
5. Help to advance in present job	25
6. Be a better parent, husband, or wife	19
7. Get away from the routine of daily living	19
8. Help get a new job	18
9. Meet new people	18
10. Work toward certification or licensing	14

Evaluation Problems

Brown and Uhl contend that current methods of evaluation of continuing medical education are less than ideal. They state that:

> institutional evaluation is fourth level evaluation; program or course evaluation, third level evaluation; learner evaluation (e.g. by examination or testing), second level evaluation; and patient care evaluation, first level evaluation. (6:1667)

They criticize current practice, charging that:

> At the present time the accreditation of institutions by the AMA lends special status and credibility to the standard types of courses, lectures, panels and seminars, certifying that such activity has value, whereas when measured, these programs usually are shown to produce no significant change in physician behavior or improvement in patient care." (6:1667)

The solution to the problem they believe is to have specific educational programs built specifically to correct specific deficiencies in patient care which have been empirically documented.

The Nature of Medical Education Directors

To lead the work of medical continuing education Burgess[4], Uhl[4], Reifenstein[22], and the majority of the directors of medical education in the United States subscribe to the notion that the director must be "as well qualified in his specialty, whether it is medicine, surgery, pathology or any other field as the members of the medical staff where he is going to work. If he is not as well qualified as the men whom he is supposed to direct, I don't think he can win their respect and support."[4] But Jason, Professor and Director of the Office of Medical Education Research and Development at Michigan State University, criticized the emphasis placed on medical training and the lack of attention given to preparation in the field of education. He commented:

> Despite the fact that medical school faculty members may have spent 15 years acquiring the specialized experience that got them hired, they have typically not spent 15 minutes preparing for the most important element of their work: the design, implementation and evaluation of instruction. (23:xi)

I am personally convinced that the prevailing untested assumption that only those who have pursued undergraduate and graduate study in medicine can become effective directors of medical education is a major obstacle to the improvement of medical education for the following reasons:

1. If we concede that educational design, implementation, and evaluation are complex processes and that the study of these processes is a task requiring specialized training, and if we believe that directors of medical education should have such specialized training, then the cost of preparing such a specialist in terms of time and money insures that the services of such an unusually well qualified person must be high priced. If a person well trained in education could perform the role, the costs of his preparation and of his services would be correspondingly lower than those of a director who had pursued extensive medical training.

2. Specialized training in any one area of medicine, such as anesthesiology, nuclear medicine, psychiatry, or dermatology scarcely seems to be a guarantee of competence to design, conduct and evaluate continuing medical education in such areas as neurological surgery, ophthalmology, pediatrics, and family practice. If the director of medical education is to be involved in the development, implementation, and evaluation of continuing education for nurses and paramedical personnel, the decreasing applicability of his specialized medical training becomes even more obvious. It seems unreasonable to assume that the director must know as much about each area of specialization as those he seeks to help who spend all of their time working within a single specialty.

3. I reject the notion that competent physicians and surgeons cannot respect and learn from and with specialists in education. Competent professionals in any area of specialization learn to recognize and appreciate the specialized competence of individuals whose specialization differs from their own. The idea that medical specialists are so biased in outlook as to be incapable of recognizing and utilizing professionals in education is a myth that has outlived its time.

4. The assertion that medical training is essential for a director of medical education is an untested assumption. Lacking hard evidence, the professionals in medicine could scarcely maintain that there is proof to support such a belief. Perhaps it is time to examine the evidence.

An Educationist's Perspective

I should like to share with you an experience I have had in designing, implementing, and evaluating a continuing education program with members of the American Academy of Orthopaedic Surgery. My purpose in sharing this experience with you is not to present a report on an ideal continuing education program but rather to give you some idea of what we have been able to do without a special grant and without a subsidy. The costs of planning, implementing and evaluating the program were covered in part by the registration fees paid by the participants. The program involved an appreciable amount of time contributed by me and several of my graduate students in adult education as a part of their training.

An Orthopaedic Educators' Workshop

In the period November 1967 through January 1971 the ad hoc committee on educator courses of the American Academy of Orthopaedic Surgery was instrumental in the planning and execution of six six-day residential workshops on the application of adult education concepts in orthopaedic education. These workshops were conducted to achieve specified cognitive educational objectives and an unstated affective objective which was that within one year after returning to their work situation the workshop participants would use the skills they had developed during the workshop.

Nature of the Workshop Model

This workshop was designed to take advantage of the characteristics of residential adult education which are believed to contribute to its effectiveness as an educational method for changing attitudes. This program was compressed into an intensive six-day experience not simple because the intended participants were known to have very full schedules and find it difficult to be away from their duties for an extended period of time, but primarily because the planners believed that a residential experience which assured the highest practical degree of: 1) isolation from distracting influences, 2) concentration on the subject matter to be learned, and 3) psychosocial support provided by a group of colleagues all working toward the same goals constitutes the most powerful educational approach.

The concept of behavioral objectives as advanced by Benjamin S. Bloom was the key concept which was taught. This concept was utilized in the design and operation of the workshops, giving the participants both an intellectual understanding of the concept and a direct personal experience of being a student in an educational program which made practical applications of the concept.

Testing was used at the beginning, the ending, and throughout the workshops to demonstrate both 1) the need for and use of feedback from learners to serve as evidence of the level of effectiveness of the instruction, and 2) the value to learners of regular systematic assessment of their progress individually and collectively.

In each workshop an elected steering committee composed of three or four workshop participants met daily with the instructional staff to review each day's work, to offer constructive criticisms of the approaches used, and to recommend program modifications for the following day. The steering committees proved to be an invaluable communication link between the participants and the staff, for as representatives of the participants the steering committee members were encouraged to bring up all sorts of concerns in a confidential and non-threatening situation which made it possible for the staff to respond promptly to emerging problems which they might not have detected otherwise. The steering committee members also reported to the participants, individually and collectively, regarding the intentions of the staff and the problems which the staff perceived.

Participants' Cognitive Gain

Cognitive gain scores were computed for all of the participants who attended the three workshops held in January, 1971 at Chicago, Tallahassee, and Rancho Santa Fe. The instruments used in the pretest and in the post test had been checked for both reliability and validity and were found to be sound.

Mean cognitive gain scores for the three workshops were: Chicago, 52.23; Tallahassee, 41.07; and Rancho Santa Fe, 56.44. Analysis of variance of the scores of the 85 participants in the three workshops indicated statistically significant differences at the .01 level of probability. Accordingly it is clear that the differences in the amount of gain was not likely to have occurred by chance. Nevertheless, the final test mean scores for the three workshops were: Chicago, 69.80; Tallahassee, 73.77; and Rancho Santa Fe, 80.62. Although the Rancho Santa Fe workshop was superior to the other workshops in terms of both gain and posttest mean scores, the participants at Tallahassee who showed the smallest mean gain had a higher mean posttest score than did the Chicago participants who, while gaining more, ended up at a lower level than the Tallahassee, group.

It must be noted that last minute changes in the responsibility of the instructional staff caused by a personal emergency of one of the staff members put the Tallahassee workshop at some disadvantage.

The most important single inference to be drawn from the cognitive gain data on the three workshops is that *regardless of the particular instructional team utilized, the participants in all three workshops made significant gains in their ability to comprehend and apply the behavioral objectives approach to the content of orthopaedic education.*

Yet application and not simply intellectual growth was the most important justification for holding the workshops so it is essential to turn now to consider what the participants did with what they learned.

Participants' Application of the Concepts

In planning the evaluation of the participants' application of the educational concepts which were taught in the workshop it was decided that no effort would be made to assess changes until a full year had passed after the participants had completed the workshops. The decision to delay data collection for a 12-month period was done deliberately, even though it was recognized that many factors might be influencing the workshop participants' behavior in addition to the concepts they had learned and the skills they had developed in the six-day workshop. Nevertheless, it was concluded that a full year's time would allow the participants to have gone through an entire year's cycle of activities, especially course planning, and that the logical time to use certain of the concepts which had been taught would be when the participants were actually engaged in course planning. Therefore, despite the inability to control for intervening forces which might influence the respondents' instructional behavior, it was decided that the assessment of the extent of application would be conducted one year after the workshops had been held.

Ninety-nine questionnaires were mailed on February 25, 1972 to 99 persons who had participated in the workshops. Follow-up mailings were used and 64 completed questionnaires were received. In an effort to secure as much information as possible on the participants' attitudes toward the workshop activity and the questionnaire, a special follow-up questionnaire was sent to the 35 nonrespondents. Twenty-seven participants responded to the follow-up questionnaire giving the following reasons for not returning the original questionnaire: 17 said they just had not gotten around to it; 7 said they had misplaced the questionnaire; 2 said they had no change of behavior to report; and one returned the postcard with no comment. Eight of those who did not return the original questionnaire either did not receive a copy of the follow-up questionnaire because it was improperly addressed or misplaced in the mails or they received a copy but chose not to cooperate.

Five classes of behavior change were measured by the affective questionnaire: 1) change of perception with regard to the process of education; 2) change of behavior with regard to curriculum; 3) change of behavior with regard to teaching methods; 4) change of behavior with regard to testing practices; and 5) change in level of interest in thinking about and discussing the concepts presented at the workshop. The change of behavior scores were: Chicago, 2.79; Tallahassee, 2.41; and Rancho Santa Fe, 3.21 out of a possible maximum score of 6.60. One hundred per cent of the respondents reported some change of behavior and supplied evidence to support the claim.

An analysis of variance was conducted on the change of behavior scores to determine whether the difference among the mean scores were significant statistically. The analysis showed that there was one chance in twenty that differences among the means of the magnitude found in this case could have occurred by chance. Accordingly the differences among the means were considered to be statistically significant. *The most important single inference to be drawn from the evidence on the participants' application of the concepts taught in the workshops is that appreciable behavioral change was reported and substantiated by the two-thirds of the workshop participants who returned their questionnaires.*

At this point it is appropriate to examine the relationship between the documented amount of learning which occurred in the workshops and the documented extent of change in teaching behavior.

Relationship Between Cognitive Gain and Extent of Application of the Concepts

It seems entirely logical to assume that before a learner can apply a concept, he must first acquire an understanding of that concept. What is less certain is that if a learner masters a concept he will invariably apply it when he has the opportunity to do so. Accordingly a Pearson product-moment correlation was calculated between the cognitive gain and behavioral change scores for all those individuals for whom both scores were abailable. The correlation coefficient was 0.33.

The correlation coefficient is evidence that 89 per cent of the differences in teaching behavior scores could not be accounted for by differences in the amount of cognitive learning which had taken place. However, the importance of this finding should not be overemphasized because 1) the respondents to the affective questionnaire all reported at least a minimal amount of change in behavior; and 2) the psychosocial factors associated with the residential education method may have served to persuade some of the participants to modify their approaches to teaching even though their scores on the tests designed to measure comprehension and ability to apply the behavioral objectives approach remained low throughout the workshop.

It seems likely that both the factual learning and the psychosocial environment interacted to produce the reported changes in approaches to teaching. The instruments utilized in the study did not provide data on the psychosocial environment and therefore any suppositions concerning its impact are admittedly conjecture.

The statistical analysis of the relationship between the amount of cognitive gain and the extent of application of the concepts indicates that the differences in the amount of cognitive material learned (as measured by the gain scores) do not account for more than approximately 10 per cent of the differences reported in the scores for extent of change in teaching behavior.

Apparently then, although the six-day residential workshop was an effective vehicle for producing change in both the participants' knowledge concerning and ability to apply educational concepts and their approaches to teaching, the differences in the amount of cognitive material learned is not the major factor determining the extent of change produced in teaching behavior.

Significance of the Results

This research has demonstrated that the six-day residential workshop has been an effective means of increasing the level of knowledge of a selected group or orthopaedic surgeons in the field of education. Their comprehension of key concepts and their ability to apply these concepts in working with the subject-matter of orthopaedic education has been documented. Further, all those who responded to the questionnaire dealing with changes in teaching behavior distributed one year after the workshop were able to identify and substantiate claims of having made at least a modest amount of changes in the way they handle their educational responsibilities.

The six-day residential workshop proved to be a useful method for inducing behavior change. Although the amount of cognitive learning did not provide a sufficient explanation for differences in the extent of changes in teaching behavior which was reported, it seems logical to assume that after some critical, but as yet undetermined cognitive level has been achieved, differences in the extent of application are determined by attitudinal and perhaps situational factors.

If there is a feeling of a need to increase orthopaedic educators' ability to apply educational concepts, then the six-day intensive residential workshop appears to be an effective approach to meeting that need. If there is a need to modify the behavior of orthopaedic educators as they perform in their educational role, the six-day program which had been developed and refined has been shown to produce changes in this area also.

A note of warning must be made, however, lest the data are interpreted as demonstrating more than has actually been documented. The purpose of education is to modify the behavior of the learners. The purpose of education in orthopaedic surgery is to develop and maintain highly skilled professional orthopaedic surgeons. While the research reported here does present fairly strong evidence that what professors of orthopaedics know about the field of education can be increased appreciably and while the evidence also shows that these professors also change their approach to their educational responsibilities, no data have been collected to support a claim that medical students, residents, and orthopaedic alumni of the programs represented in the workshops are now reaching higer levels of cognitive development in orthopaedics than they were achieving prior to their mentors' participation in the workshops. Such an inference rests entirely on generalizations drawn from other research in education.

It should be noted that the respondents to the affective questionnaire described in this report submitted a great deal of impressive material to document their reported changes in behavior. These course syllabi, behavioral objectives for instructional units, sample tests, and other curricular and instructional material developed by or under the supervision of the responding orthopaedic educators are the result of a great many months of conscientious effort to apply the concepts learned in the workshops.

The basic workshop model has been successful in changing the cognitive status of the participants regarding a systematic structured approach to education as well as in changing their instructional behavior.

The six-day intensive residential format has proven viable and effective for its announced purposes. There is no reason to believe, however, that a shorter period, and particularly one which did not offer isolation from distraction, intense concentration, and group psychosocial support would accomplish any of the objectives of this workshop. This content does not lend itself to presentation in a few hours as a short course in connection with the annual meeting of the Academy.

A Final Observation

Approximately 200 orthopaedic educators have gone through an intensive educational experience which has been called the Workshop on the Application of Adult Education Concepts to Orthopaedic Education. These men had never before had the luxury of being able to devote their undivided attention to the educational process, which is such an important part of their professional lives. Simply as a result of associating with other alert and dedicated orthopaedic educators the workshop participants undoubtedly learned a great deal from each other that will lead to improved educational performance. The planners of the workshop did not wish to minimize the importance of this learning, but in planning the primary guideline to be observed was that the evaluation of this workshop must rest upon the degree to which the stated objectives have been achieved.

The evidence is in. The evaluation is positive, considering only the announced objectives. It may be that in the long run the unanticipated learning which occurred will be of greater importance than that which was planned. This possibility cannot be ruled out. Nevertheless, the planning was designed to achieve the stated objectives and that has been accomplished. If other favorable consequences have resulted, that is all to the good. Finally, however, the educator must be held accountable for accomplishing what he sets out to do and it is in that perspective that this report is submitted.

Apparently the perspectives, knowledge and skills of medical educators can be changed by programs designed cooperatively by a team of specialists in medicine and specialists in education. Accordingly it seems sound to recommend that the approach be utilized and further refined by medical and educational specialists working in various parts of the nation and at undergraduate, graduate and postgraduate levels.

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Penicillinase-producing *Neisseria gonorrhoeae*

The Bureau of Laboratories, CDC, has identified 2 penicillinase-producing isolates of *Neisseria gonorrheae,* obtained from a patient in Maryland and a patient in California, who were first seen in February and April 1976, respectively. Both remained symptomatic after receiving 4.8 million units of aqueous procaine penicillin G with 1 gram of probenecid and were treated with a variety of regimens before responding to spectinomycin. Further epidemiologic and clinical data are being obtained.

Reported by WA Ashford, Col. RN Lucas, and Col. MB Miller, David Grant Medical Center, Travis Air Force Base, California; J Chin, MD, State Epidemiologist, California State Dept. of Health; WJ Marek, MD, St. Mary's County, and KH Acree, MDCM, State Epidemiologist, Maryland State Dept of Health and Mental Hygiene; Bur of Laboratories and Bur of State Services, CDC.

Editorial Note: This appears to be the first time that penicillinase-producing gonococci have been isolated from patients, and a search for additional cases is being undertaken. CDC recommends that all patients with gonorrhea be cultured 7 to 14 days after completion of treatment to confirm cure. Patients with a positive culture should be re-treated with 2 grams of spectinomycin intramuscularly. If prior arrangements have been made, gonococcal isolates for penicillinase testing may be sent to the Bureau of Laboratories, CDC, through state health department laboratories.—*H.E.W., Public Health Service, Atlanta, Ga.,* August 27, 1976.

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Early Child Intervention

Helen Kinlan, Ed. M. and David K. Sommer, M.S.

Most adults greet their new baby with enthusiasm, although with little real training for their job as teacher in its early years. They have waited a long time for its arrival, and they lavish attention and affection on it. However, how long will parents continue to provide such stimulation for their child without the anticipated feedback? If he does not respond warmly, giggle and coo and reach out when his parents play with him eventually they become frustrated and, assume their infant does not need or want their attention—and perhaps begin to think of themselves as failures as parents. They are unaware of the fact that developmentally delayed children, those with emotional, mental, physical, or learning problems, often cannot respond properly to the colors, patterns, and sounds of their world, although they need the sensory stimulation of play even more than the average child.

In response to this situation, early intervention and stimulation programs for the very young child have begun to appear nationwide. Their goal is to enable developmentally disabled children to remain in their homes, develop to their fullest potential, and become functioning members of their society. The programs themselves, provided by consumer groups or state agencies, such as the Connecticut Department of Mental Retardation, are supported by a network of other family-centered services, such as parent counseling, crisis intervention, community-based recreation, and respite care.

When a child is suspected of having a significant developmental delay, it is an absolute necessity to inform parents and assist them in making contact with diagnostic, screening and intervention programs, according to David K. Sommer, Director of Psychological Services for the Hartford Regional Center of the Connecticut Department of Mental Retardation. "The physician may well be able to assess the physical extent of a disability," the psychologist continued, "but the specific techniques of self-feeding, toilet training and social interaction can often best be learned from developmental specialists."

"In some cases, the child does outgrow his early slowness," he continued, "but then at the very worst the parents have spent some extra time in assisting their child in early learning, rather than remaining home feeling concerned, frustrated, and inadequate and spending time in diagnosis—shopping." With a severe problem, the first months are crucial and time lost cannot be regained. Observation of the child's adaptive and language behavior and motor skills by such skilled specialists can often aid the physician in his diagnosis and continuing care.

The purpose of early intervention programs is to maximize a child's physical, social, intellectual, and emotional development, to provide parents with a better understanding of the child's problems and to assist parents in teaching the appropriate skills and behaviors at home. If a child's lack of response proves to be more than just his individual rate of normal growth, special programs help the parent and child take advantage of the earliest possible opportunities for enhancing the child's potential.

Special Programs

The Early Development Intervention Training Program (EDIT) at Newington's Hartford Regional Center, for example, provides home stimulation for infants from six weeks to approximately 18 months of age, and early intervention classes for children 18 months to 3.8 years.

Home training specialists, according to program co-ordinator Helen Kinlan, visit families in the infant program on a weekly, biweekly, or monthly basis to suggest new at-home activities, demonstrate stimulation and teaching techniques, and monitor the child's progress. In later classroom sessions, parents bring their children two mornings a week for a two hour class, where they are asked to assist and observe.

Both phases of the program concentrate on self-help skills, fine and gross motor co-ordination, speech and language, sensory awareness, attention span, learning skills and social-emotional growth and behavior management. Participating parents meet monthly to discuss problems of mutual interest and share information.

"Many parents become effective teachers, both of their own and other children," she said, "and they are involving themselves and their child in a learning experience that is enriching to them as well. Education for the handicapped child is also training for the parent as a teacher."

HELLEN KINLAN, ED. M., Co-ordinator, Early Developmental Intervention Training Program (EDIT); DAVID K. SOMMER, M.S., Psychologist, Director of Clinical Services, both at Hartford Regional Center, Newington, Ct.

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Representing the Profession: AMA Plan—1976

One of AMA's major missions is to represent the medical profession and act as a spokesman for physicians to the public, the government, industry, and others.

Two general subjects related to representing the profession are covered under this section:

1. Topics or issues on which it is important that the profession's feelings and attitudes be known and considered by Congress, the public, etc.
2. Mechanisms for communicating the profession's attitudes and opinions and maximizing their impact on decision making.

Regulation of Medicine

In the coming years, the AMA will continue to face the direct threat of legislation and other regulatory activity that interferes with the physician's responsibility to his patient. Such efforts usually interject one or more third parties into the physician-patient relationship, thereby interfering with the delivery of care and infringing on the physician's independence and self-determination as a practitioner. In previous AMA Plans, the question of increased regulatory activities was raised, and general approaches to the overall regulatory problem were addressed in Critical Issue Plans (see the Progress Report section of this Plan). Additional analysis of the regulation of medicine as a generalized problem would probably not result in significant new insights at this time. However, there are several specific regulatory issues that are currently facing AMA. These are of such importance that they should be addressed in this Plan. Since each of these specific issues is current, AMA has intense ongoing activity addressing them, including a strategic approach to overcome the immediate threat posed by each. Since several of the issues involve litigation, the specifics of the strategies cannot be widely publicized.

These issues, however, in addition to posing very immediate threats, also have long term implications for AMA. The Critical Issue Plans that are prepared in response to these issues should focus on an analysis of the long range implications of the issues and should suggest strategies for dealing with the issues after the immediate crises are past.

Health Planning Legislation—The health planning legislation passed by the 93rd Congress is possibly the most far reaching single piece of health legislation ever enacted. It provides for a nationwide comprehensive network of planning bodies that will be active in almost all aspects of health delivery. The very nature of medical practice could be affected by the implementation of this law. This complex law has received sufficient analysis and publicity and it need not be summarized in detail in this Plan. However, some of the more disturbing implications should be mentioned.

—The Secretary of HEW has extensive powers, which, if exercised, could result in decisions that directly affect the practice of medicine.

—Most health facility construction (including some group practices or even smaller physician offices) could come under federal control.

—The law could result in the establishment of an extensive data base on health delivery over which the private sector would have no control.

—The law requires mandatory "certificate of need" legislation at the state level.

—The law emphasizes the development of certain types of medical practices (i.e., group practice; HMO's, etc.) over others.

In short, this law provides the potential for making the health delivery system a type of public utility under federal control, which could include traditional utility-type rate regulation. The entire nature of health delivery in the U.S. could be significantly affected.

The AMA has spoken strongly against this law—prior to its passage by Congress, prior to approval by the President, and since it has been put into the phase of regulation drafting and implementation. At the 1975 Annual Convention the House of Delegates supported "any action, including legal action," deemed appropriate in preventing implementation of the National Health Planning and Resources Development Act. The Board of Trustees has announced its intention to take legal action to challenge the constitutionality of the law at the appropriate time, and has now identified a "test case" in North Carolina. AMA will join the North Carolina State Medical Society in a suit that focuses principally on the certificate of need provisions of the law.

The Critical Issue Plan that addresses this issue should examine the long term implications of the planning act as a basis for developing the health system into a public utility. What strategies should AMA pursue to reduce the threat of further actions along this line, and what can private medicine do to demonstrate that a public utility approach is not needed?

Health Manpower Legislation—There are a number of health manpower bills pending in Congress. Together, they constitute a health policy package which, if enacted, would introduce numerous artificial constraints and pressures on the production and distribu-

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Report of the Board of Trustees of the AMA to the House of Delegates, Annual Meeting, June 1976.

tion of health manpower. Some of the legislation relates to aid medical education directly while other legislation deals with such programs as the National Health Service Corps. Among the concepts that AMA has objected to are capitation grants conditioned on mandatory service or mandatory paybacks, punitive payback provisions attached to scholarships, control of the number and types of residency positions, and federal licensure of physicians. These concepts were proposed in the various bills based on a perception of manpower imbalances of various types. For the long term, AMA must either find alternative, more desirable solutions or show that the imbalances do not really exist. Otherwise, even if the current objectionable manpower legislation is defeated, other similar proposals will continue to persist. This is, of course, part of the overall problem of access and availability of care, an issue discussed elsewhere in this Plan. The pressure for additional controls on health manpower could increase significantly if national health insurance is passed and there is a sudden surge of demand on the existing supply of health professionals. AMA must relieve the current pressure and then go on to anticipate the kinds of pressures that will emerge under future legislation.

Maximum Allowable Cost Regulations—The Maximum Allowable Cost regulations which have been issued by HEW establish the basis for federal reimbursement for drugs under federal medical programs, including Medicare and Medicaid. The new regulations would establish a "maximum allowable cost" based on "actual acquisition cost plus a dispensing fee." Inherent in the regulations is an assumption of bioequivalency of drugs, a concept of questionable validity. In addition, AMA has taken exception to some of the administrative processes that have been established for implementing the regulations.

The MAC regulations constitute a new dimension in the series of actions to regulate medicine in recent years. Heretofore, regulatory attempts have been aimed primarily at establishing financial constraints or constraints on the utilization of care. These obviously can have an impact on the overall kind of care a physician delivers, but they do not directly dictate what kind of clinical decisions the physician can make. Even the aspects of PSRO that deal with clinical standards of care are left to the profession to establish. However, the MAC regulations interfere directly with the physician's clinical and therapeutic decisions by imposing decisions made by government employees on the drugs he may prescribe, based on cost considerations rather than clinical efficacy. This comes a step closer to actually dictating clinical decisions than any other program has up to this time. This implication of the MAC regulations should be examined and projected to the future. A strategy for addressing it should be developed.

Federal Trade Commission's Advertising "Complaint"—In December of 1975, the Federal Trade Commission issued a "complaint" charging that the portion of the AMA's Principles of Medical Ethics that prohibits "solicitation of patients" is a ban on advertising and restricts competition among physicians. Hence, it is charged that AMA is restraining trade. AMA immediately challenged the FTC's finding and is pursuing legal action through the appropriate procedures to formally challenge the complaint. AMA's policy, as stated in the Principles, is that "solicitation of patients" is unethical. However, the AMA has never considered it unethical for physicians to make known to the public, through appropriate means, their availability to see patients, office hours, etc., and AMA encourages physicians and patients to discuss fees openly.

The implications of the FTC's complaint are far reaching. At stake is the very essence of professionalism in medicine. Some of the day-to-day implications involve the effect of advertising on fraudulent misleading of the public by various quacks, the tendency to restrict the free flow of information on new procedures and other medical findings, as well as the probable increase in the cost of care to the patient as a result of the physician passing along the cost of advertising. Is the FTC's action part of an effort to eliminate "professionalism" from the professions? If so, what is the next likely step? How should the professions unite to resist this trend?

Federal Trade Commission's Charges on Medical Education—In addition to its "complaint" on AMA policy on physician advertising, the Federal Trade Commission has announced that it will investigate AMA "to determine whether AMA may have illegally restrained the supply of physicians and health care services." The FTC said it would be looking into AMA activities related to:

—accreditation of medical schools and graduate programs,

—definition of fields of practice for physicians and allied health personnel, and

—limitations on forms of health care delivery inconsistent with a traditional fee-for-service approach.

No other medical organizations that participate in accreditation and policy making in medical education were cited in the FTC's announcement. AMA has responded by citing the increasing number of medical schools and physicians and AMA's activities to increase the health manpower pool. It is interesting that at the same time AMA is being investigated by the FTC for restraining the supply of physicians and training programs.

The President's Page

Why the AMA? Should we join? Many physicians have have taken a negative stand on this matter and only about 50% of Connecticut physicians do belong. Has their decision been the result of careful consideration or has it been one based on dissatisfaction with a specific policy or decision of the organization?

I have questioned on this page in the past whether organized medicine has provided sufficient leadership in purely health matters. The question remains. However, I think it is pertinent to indicate that at the 1976 AMA House of Delegates convention, resolutions were considered with respect to: 1) Television Violence; 2) Small Pox Vaccination policy; 3) a Joint National Committee on Detection, Diagnosis, and Treatment of Hypertension; 4) The Fight Self-Pollution Campaign of the Massachusetts Medical Society; 5) Issues of smoking and federal tobacco subsidies, and; 6) Prolonging of life, medical ethics in "hopeless cases", and use of life sustaining measures. The ultimate disposition of each of these issues might not have met with the individual approval of all of us but more to the point is the fact that they were considered and future decisions can alter present situations if that reflects the wish of the majority. The AMA affords the forum for discussion and our participation, not withdrawal, will insure that majority opinion prevails.

While leadership in matters of health is paramount, activities involving the economics of medicine can not be neglected. The advent of the Federal Government into medical practice is obvious. Attempts to regulate practice increase each year. Has the AMA provided leadership in this area? In 1975 the AMA went into federal court with a suit to block the HEW regulation on 24 hour utilization review requirements. This intervention was successful and the requirement for review within 24 hours of admission was withdrawn. Not so successful was opposition to Maximum Allowable Cost regulations, and generic drugs will be substituted for brand names unless specifically interdicted. The AMA has been allowed to join North Carolina in its lawsuit contesting the constitutionality of the 1974 health planning act. This is the law which delegates to consumer dominated local health systems agencies and coordinating state councils so much power in health planning which it is feared will be influenced more by cost considerations than by medical value. The outcome of this opposition remains to be seen. The Federal Trade Commission has complained against the AMA ban on patient solicitation on the grounds that it is in restraint of trade. Connecticut and New Haven County were singled out as the objects in this complaint, and the AMA has taken up the burden of contesting this matter. The state of Connecticut and New Haven would not have been in a financial position to do this. The AMA has opposed vigorously the health manpower and medical education bill which originally would have tied capitation aid to medical schools with payback requirements either in cash or service for all students. This issue also is not settled and at present it appears that limitations on the types of medical residency programs allowed might be the outcome but again AMA opposition has influenced the measure and will produce some beneficial results.

There are many other issues, current and future which will require vigorous reaction. Only strong organized opposition can be effective. The AMA alone offers such leadership and to me the need for total membership seems unquestionable.

Hilliard Spitz, M.D.
President

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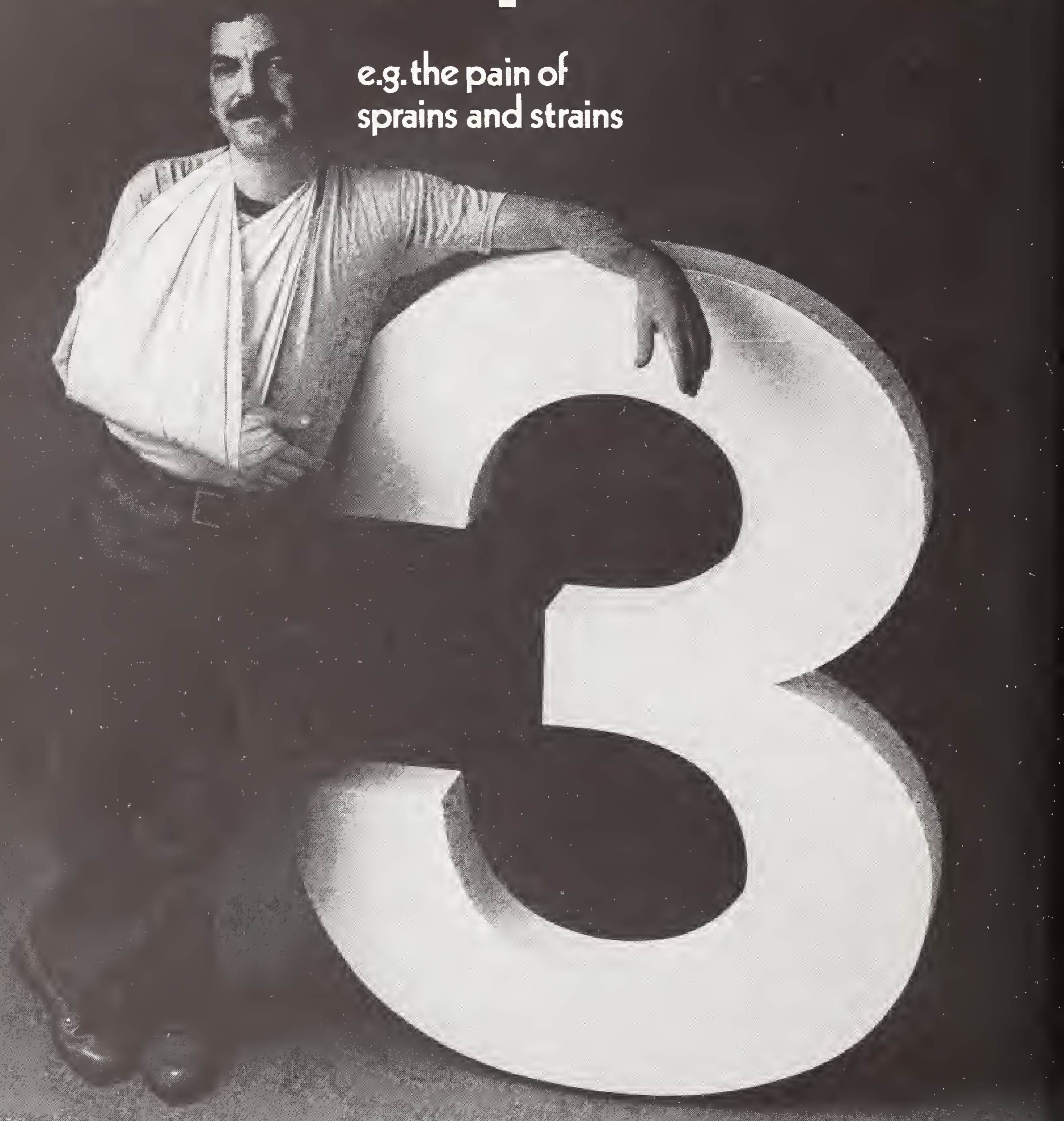

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Reflections from the Dean's Office

Robert U. Massey, M. D.

Sooner or later medical schools are shaken by most of the storms that beat upon the profession. Their special place in the community of medicine may give protection, but the winds rumble in the chimneys, and the torrents beat against the panes.

The concern over the decline of primary care has led to family practice programs, divisions of general medicine, and more attention to ambulatory care teaching. Dark suspicions about human experimentation and fears of dehumanizing forces in scientific medicine have led to the formation of divisions of humanities with seminars in the ethics of health care. The social revolution of the sixties aroused interest in community medicine.

Academic goals have about them an aura of changelessness; educational objectives change to suit the times; in fact they mirror the times.

Medical care costs will dominate the weather for hospitals and physicians for the next decade. The warnings of that storm went out years ago. The way health insurance and Medicare worked would have to lead to economic disaster; the classical controls on demand were gone; the rising cost of care would soar free of the marketplace.

In his Shattuck Lecture, former congressman William R. Roy, M.D., J.D., asks how we can ration health services so as to leave enough funds for other health initiatives such as research, education, rehabilitation and preventive services. He suggests that there may be only two alternatives: "One is an arbitrary government payment for all or nearly all services. The other is limitation of the size of the health care systems by control of inputs"[1]

Dr. Roy believes that input control is the better alternative because it leaves our present institutions and organizations essentially intact while limiting their size. It allows for planned change.

The economics of health care affect the economics of medical education: the more personal health services, the fewer resources for "other health initiatives", including education and research.

If the cap on payment method is used to keep health services from bankrupting the system, the response will be as unthinking as the control, and medical schools will adjust their budgets, grumble, and settle into the mediocrity which is certain to follow. The quality of faculty and students will decline, research will become sterile and curriculum stereotyped. Medical care will be poor, education will be dull, and creative energies of research will seek more fertile fields.

If the alternative chosen is to limit the size of the system, medical schools and teaching hospitals may recognize a new opportunity for education and research. There are three ways to limit inputs.

The first thing is to appoint planning groups to make tough decisions. The quality of these decisions will be mixed, and there will be bad mistakes that will have grave consequences. This planning may be centralized or decentralized, consumer controlled or provider dominated. Mistakes will be made in any case. An urge to sit on committees is no substitute for knowledge. There will be trial and error, and since the results of error will be long in coming and difficult to recognize, the process will work badly. Problems of planning, implementation, and control will be unresolved. Politics will be kept out with difficulty. Ignorance will be endemic, and interest will wane.

The second way to control input would be to limit demand by educating patients in self-care and disease prevention. That has never been seriously tried. We should need a concerted effort by doctors, hospitals, public schools, universities, television, and newspapers to get it all started. It would need to be sustained for years before we knew whether it was working. It might take fire like the Sunday school movement or prohibition, but there is no guarantee. It should nevertheless be tried.

The third way to control input would be by educating physicians. That might be easier, and the size of the task is a thousand times smaller. After all, medical care costs are determined by physicians. The decisions to test, prescribe, hospitalize, and operate belong to physicians. There have been studies that show that some physicians generate two or three times as many inputs as their colleagues in the same specialty and same community, and that they are unaware of it.

Surely this is an opportunity for research and education. Investigators have begun to learn about input costs, quality, and patient satisfaction. Education should be serious about the economical use of the resources for patient care. Medical students and physicians need to learn how to educate their patients to use them reasonably and with restraint.

Tradesmen would see this as economic suicide. Physicians will not react that way; their lives are dedicated to reducing the need for their services.

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ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut, School of Medicine, Farmington.

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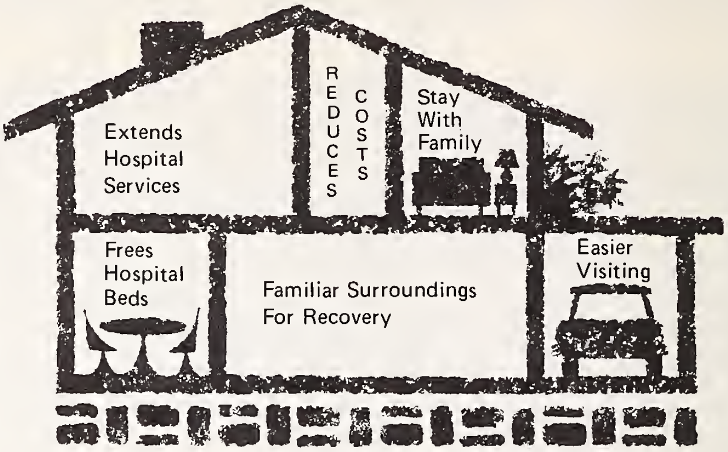

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EDITORIALS

The Commission and You

The Connecticut Commission on Hospitals and Health Care has finally been challenged in the courts. Initial support for the position of several Connecticut hospitals has been rendered by a jurist against the Commission's budgetary formulations and restrictions. The final outcome is pending, but is this simply a contest between the hospitals and government, or are we as physicians in the private sector not also involved as interested parties? Certainly, the outcome will affect us all as providers of medical care in Connecticut.

It has been only three years since the State's Commission on Hospitals and Health Care (CHHC) was born and given as its prime charge the task of reducing or at least stemming the tide of soaring health costs. For the first two and one half years the relationship between the Commission and the Hospitals generally was cordial. Although the administrative staffs of the hospital were forced to function under a more stringent budgetary control, they cooperated without too much protest. Additional voluminous, expensive, time-consuming paper work was assimilated by the hospitals to prepare for public hearings in support of any capital expenditure over one hundred thousand dollars ($100,000.00) and to furnish minute details demanded in the preparation of the annual operating budget.

Meanwhile, practicing physicians were affected little by the presence of the Commission, perceived as no direct threat to the private practice of medicine; we mused while the hospitals and Hartford jousted. However, at times, individual physicians became aware of the Commission's presence when one of our pet capital equipment items failed to make the cut. It is fair to say most of the requested capital expenditure items during this period were granted after a mild to perhaps moderate inconvenience.

This honeymoon period was terminated abruptly this past winter with the appointment by the Governor of a new Executive Director, an aggressive, ambitious, "health expert" on loan from the Department of Health, Education and Welfare. One of his first acts was to call a halt to the acquisition of CT scanners by hospitals. Why? Because seven were enough despite the fact that two cities had five of them. Is this considered good regional planning on the part of the Commission? Subsequent denials have been issued to hospitals in Waterbury, Stamford, and New London without good reason being offered by CHHC. Are the patients in these "have not" communities being offered equal medical diagnostic advantages, or do they have to travel at times by expensive ambulance to seek the merits of modern technology? Moreover, what cost saving do we actually achieve by hospitalizing a patient for neurological evaluation, utilizing multiple, expensive, uncomfortable and often risky procedures—arteriography, pneumoencephalography—when a diagnosis can be made by means of a CT scan—a single examination without risk or discomfort and without hospitalization. It is obvious the Commission's approach to this problem was then very arbitrary and capricious in granting or not granting acquisition permission. During this period there were no published criteria used by the Commission to indicate who might be the best recipients for this sophisticated diagnostic modality.

As an afterthought, a Task Force was established in June 1976 to give them counsel on such matters. The recommendations of the Task Force have been reviewed elsewhere in this issue of the Journal by one of the members of that group, Dr. G. Freedman. What, if anything, CHHC will decide to do with these recommendations is speculation at this time.

Not only are the hospitals and their Boards of Trustees frustrated in their efforts to provide quality medical care to the respective communities, but we physicians are beginning to feel directly the cuts and denials in our own endeavors to practice quality medicine. Moreover, there is little hope for optimism. The question must be asked how far and to what extent will the Commission try to control the private practice of medicine as we know it. It is by no means a secret that they relish the thought of regulating medicine outside of the hospitals just as they have tried to impose restrictions within.

Cooperation to control health care costs we can heartily endorse, but not at the expense of good care. How can a group of principally lay individuals with sparse knowledge of the workings of hospitals and medical practice, with only token physician representation on the panel, make such profound decisions in the health care field?

During the past few months, several hospitals have initiated court actions against the Commission for their often illogical adverse decisions regarding the hospitals' efforts to construct or to replace antiquated plans or equipment. In recent weeks, legislators throughout the state have been publicly voicing disapproval of the Commission's methods in reducing the hospitals' operating budgets and, more recently, 18 hospitals won a stay of execution of the CHHC imposed budgets. This latter action strikes at the Commission's *raison d'etre* and, perhaps more importantly, has stimulated considerable interest not only in hospitals and health planning agencies in neighboring states, but throughout the country. If the CHHC wins this battle in the courts, there is no telling how aggressive they might become in future years.

Our needs and desires for better patient care must be heard, but if we sit back and let the hospitals do all the fighting, it may be too late. The effort must be a united one—through our patients' letters and comments, through our representatives in the state legislature and through our medical societies. We must not permit the Commission to thwart the proper evolution of quality medical care in this state.

Richard J. Fleming, M.D.

Clinical Professor of Radiology,
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Mammography? When?

There has been a growing controversy over the benefits *versus* the risks of mammography. With breast cancer leading the field of causes of death in women in this country it is a natural desire and a real necessity to detect the disease when it is most amenable to cure. Since some breast cancers can be found radiographically before they are palpable one might advocate performing this test periodically on all women.

Yet the benefit of possible detection must be balanced against the risk of exposing the breast to radiation—especially repeated exposure—which may increase the chance of developing a cancer. While the average woman runs about a 7% chance of developing breast cancer, some individuals in the "high risk" category face a 50-50 chance. Perhaps this group then should not be deprived of the benefit, their chances of getting in trouble already being so great. Better to produce a *few* more cancers and cure a *lot* more!

Furthermore, it takes time—years—before a radiation-induced cancer develops. So the older the individual and the shorter the life expectancy the less risk from mammography. The HIP of New York found no improvement in the death rate for women under 50 subjected to routine screening by mammography.

The Cancer Coordinating Committee of the Connecticut State Medical Society took these matters into consideration in *FOLLOW-UP OF CANCER—A HANDBOOK FOR PHYSICIANS,* and has pursued further. Its recommendations published elsewhere in this issue of *Connecticut Medicine* were withheld pending consultation with the Connecticut Radiology Association. Full agreement was found here, and since then the National Cancer Institute and the American Cancer Society have jointly issued a statement quite consistent also.

Almost more important is the interpretation. The absence of roentgenologic diagnostic findings does *not* preclude the presence of cancer in the breast. Therefore when a lump is felt in the breast, the decision to biopsy must not be affected by mammography. There have been too many cancers "watched" because of "negative" mammography findings. They have moved into the incurable stage, when they would have had an 85-90% chance of cure if treated at the time of mammography 4 to 8 months earlier.

E. Tremain Bradley, M.D.

Chairman, Cancer Coordinating Committee
Connecticut State Medical Society

Respiratory Care in the Community Hospital

Since October 1972 more than a dozen respiratory therapists and technicians have been trained to perform arterial punctures at a 260 bed general community hospital—Griffin Hospital, Derby, Connecticut. Eighty-five percent of the punctures are radial, the remainder being obtained from the brachial artery. The availability of respiratory therapists who have expertise in performing arterial punctures is an invaluable asset to a community hospital, affording a direct contribution to improved patient care. The easy availability of the procedure has enabled physicians who desire the data to be less hesitant in requesting the needed test.

The following data illustrate not only the increased use of blood gas studies but also the contribution of trained respiratory therapists.

	10/71-9/30/72	*10/72-9/30/73*	*10/73-9/30/74*	*10/74-9/30/75*
Total blood gas studies:	152	1,689	2,973	3,339
Arterial punctures by respiratory therapists and technicians:	11	958	2,293	2,912

A total of 6,163 arterial punctures were performed by respiratory therapists between October 1, 1972 and September 20, 1975 without any significant complications. This represented approximately 75% of all arterial punctures performed at our community hospital. Currently 75% of all arterial punctures are continuing to be performed by respiratory therapists on a 24 hour basis.

The modern respiratory therapist is also developing expertise in intubation. An incipient program in conjunction with the Anesthesiology Department has been started to train therapists in this procedure at Griffin Hospital.

Familiarity and expertise with the volume cycled respirator is essential for the therapist. The therapist monitors the parameters on volume respirators and then makes appropriate entries on flow sheets and in problem oriented notes.

The respiratory therapist is also capable of providing chest percussion and postural drainage to patients with a secretion problem.

The monitoring of objective data obtained by therapists and their newly acquired proficiencies described above afford the opportunity to improve quality care. Survival in documented cases of the adult respiratory distress syndrome (ARDS) had exceeded seventy percent in the three year period following the above innovations—eight survivors out of eleven patients. In a similar three year period prior to 1972, in cases that could be identified as ARDS, the survival was only twenty percent—one survivor in five cases. Less dramatic but equally gratifying is the improvement following intensive therapy in patients with acute respiratory insufficiency. The presence of highly trained respiratory therapists also facilitates providing aggressive conservative therapy to patients with chronic lung disease and in many cases precludes the need to intubate a patient with acute respiratory failure.

The theoretical physiologic breakthroughs in pulmonary medicine with physiologic oriented therapy are complemented by both problem oriented recordkeeping systems and the evolution of modern respiratory therapists. The above innovations have offered the opportunity to revolutionize respiratory care in the community hospital.

Norman L. Fine, M.D.

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Griffin Hospital, Derby;
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"Big Father"—The Traditional Healer

Twenty one million people live in the sub-Saharan nations across a three thousand mile expanse of savannah and steppe, stretching from Senegal to Chad. Severe economic conditions hamper the development of adequate health services in this border region known as the Sahel. Four of the Sahelian nations belong to that desperate club of the thirteen least developed nations in the world. In 1975, the Sahelian countries spent $1 per capita for health services versus the United States expenditure of $547 per capita. But the $1 figure has been effectively reduced to 50 cents through inflation spurred on by a five-fold increase in oil prices. While 50 cents per capita may represent more money than was available twenty five years ago, nonetheless, the history of medical care in West Africa is a sorry chapter in the conquest of disease. Without the largesse of Western medicine, how have Africans survived and how were they helped to die?

The traditional healer in Africa has played an unofficial yet major role in the medical and psychiatric care of his people. The African physicians who shape and guide government health policy resist the integration of indigenous healers into the health care delivery systems. They point out that the healers have no notion of their limitations, their work is unregulated by standards or an ethical code, and has no basis in science. However, in several nations there is acceptance of the healer's capabilities in psychiatric treatment.

The traditional healer deals with human problems involving religious belief, ethnic history and magical thinking made complex by the process of modernization. There are no formal schools for learning traditional healing; learning is passed down from father to son, or by apprenticeships to master healers. Healers are conscious of the psycho-social issues in their communities, and know the beliefs and folklore of their people. In identifying with his ethnic heritage and in appreciating his group's wishes, fears and expectations, the healer's influence extends beyond the specific treatment of illness. He is symbolic of the society's values and mores. Thus, his first responsibility is the preservation of the community. He treats the sick in the context of family relationships to restore a harmony which has somehow been broken.

For the patient, the reputed skills and personality of the healer are more important than his technique. Family and community support reinforce his faith in the healer.

The traditional treatment centers around magically removing or controlling the disturbing element in the patient's life. Often, the deities are implored to overcome the patient's suffering, to placate wrathful gods, and to appease angry spirits. The disease can be caused by the neglect of certain duties and rituals, by "bad living," or by purely organic causes, although there is no concept of germs.

Physical treatment includes medication drawn from the Western pharmacopoeia, herbal remedies, small incisions and the driving away of evil spirits through the burning of alum and benzoin. Holy water purification is universal, and is frequently associated with invocations, written prescriptions and the reading of religious verses. Amulets, charms, talismans and fetishes are used to prevent disease and misfortune.

The healer's powers have wrought social changes which have been quietly accepted by medical leadership in isolated situations in some countries. Thirty miles outside of Dosso, Niger lives such a traditional healer. "Big Father" is a very powerful, popular man who counts dignitaries amongst his patients. Once a pregnant woman collapsed in his presence and went into a driving labor. When the infirmer (a local paramedic) arrived with his ambulance, "Big Father" asked him why he had come. "Big Father" would pray to Allah for the laboring woman and she would be safe. After the infirmier picked up the woman and drove through the town, she delivered easily on the ambulance litter. The driver wanted to return to thank "Big Father" but the infirmier rejected his suggestion, "I am a man of science and if I go back, I'll be discredited." From that time on "Big Father" had no interference from the infirmier. "Big Father" opened his own health post paid for by his his private fees. He asked the government to provide him with an infirmier, which was done. He built his post next to the mosque, bigger and better than any health post in the area. The "Big Father" lives in two two story houses supplied with electricity. He is "like a saint" and it is said that he is more difficult to see than the chief of state.

Herbert S. Sacks, M.D.

Associate Clinical Professor,
Pediatrics and Psychiatry (Child Study Center)
Yale University School of Medicine

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

PEDIATRIC HOUSE OFFICER PERFORMANCE

To the Editor: I write to you in reference to the article "Rating Pediatric House Officer Performance" Drs. Margolis and Cook which appeared in the August, 1976 issue of Connecticut Medicine. My criticism relates to the use of inappropriate statistics for the kinds of information which were collected. A rating system such as the one used and described in the first section of the article consisted of evaluations on a scale of 1-4 where 1 was excellent and 4 was unsatisfactory. This is known as an ordinal scale or an ordinal categorization variable and requires a somewhat different treatment from those statistics which are normally used for measured or interval variables. For example, it is totally inappropriate to ever take the mean of a series of ordinal variables, but rather one should use the median as the "average," With regard to this, Figure 1 relating average faculty ratings and frequency is not a proper use of the distribution of ordinal information. When one does draw a distribution of ordinal data it is more appropriate to use a bar graph, but even that would not be correct here since what is plotted here is an average faculty rating versus frequency.

Concerning Figure 2, again is an average of the first faculty rating versus an average of the second faculty rating and then an attempt to perform a correlation evaluation was done. A correlation is used when one is evaluating two distributions of interval or measured data, but not for ordinal data. The appropriate statistic when done not on means but on the ordinal information itself would be the Mann-Whitney U test or Cichetti's C-statistic. The fact that Figure 2 showed such a high correlation coefficient is unfortunately totally meaningless.

Finally, in Figure 3 an attempt is made to show a lack of correlation between faculty rating and board scores and again it is inappropriate to look at a correlation coefficient as in this case we are dealing with the relationship between an ordinal variable and interval variable. The appropriate statistic is Jaspen's coefficient of multi serial correlation and then the determination of its significance in the light of the data.

One of the most frequent errors in medical papers is the inappropriate evaluation of ordinal and nominal or categorical data. The various statistical tests that most people are familiar with are designed to evaluate interval data and are totally inappropriate for these other scales. I believe that there really should be some better statistical control over the content of the papers which appear in journals. This is something that most medical writers and editors talk about but unfortunately very little seems to be accomplished.

I certainly commend the authors on trying to improve our abilities to better evaluate house officers and it would certainly be of some interest if appropriate statistics were applied to this data to determine if indeed this is a useful measure in terms of the quality of a residency and the quality of its product.

Neal Koss, M.D.

Assistant Professor of Surgery (Plastic)
Yale University School of Medicine

The above letter was referred to Dr. Cook, who offers the following reply:

To the Editor: In spite of the fact that consultants in statistics from two medical centers aided in the evaluation of the data from our study, Dr. Koss has suggested far more sophisticated techniques and we appreciate his comments. Nevertheless, it still seems possible to conclude even by "eye ball" examination of the data shown in Figures 2 and 3 that one can reasonably consistently evaluate house officers' performance and that such performance does not correlate well with a test of cognition such as Board examinations.

Charles D. Cook, M.D.

Professor and Chairman,
Department of Pediatrics,
Downstate Medical Center, State University of New York, Brooklyn.
Formerly Professor and Chairman, Department of Pediatrics, Yale University School of Medicine.

Stanley B. Weld, M.D., Editor Emeritus

Dr. Weld has graciously accepted our invitation to become Editor Emeritus of *Connecticut Medicine.* He was its first Editor in 1936, serving until 1958. He is a Fellow of the American College of Surgeons, American College of Obstetrics and Gynecology, and American Association for the Advancement of Science. He also is a member of the Hartford Hospital Medical and Surgical Staff, Connecticut Historical Society, the Beaumont Medical Club, and a member of local, county, state and national medical societies.

Dr. Weld has been of great assistance to the present Editor in his suggestions, always made with point, kindness, and tact. We welcome him back.

Statement of the Cancer Coordinating Committee Regarding Mammography

1. Routine mammography is not recommended at this time for women under the age of 50 except in special high risk individuals when advised by her physician and accepted by the patient.

2. When strong radiographic evidence of cancer is lacking, the report should include a statement that such absence of positive findings does not exclude the presence of malignancy in the breast.

AMA National Leadership Conference

January 20-23, 1977

The theme for the 5th annual AMA National Leadership Conference, Jan. 20-23, at the O'Hare Marriott Motor Hotel, Chicago, will be "Portrait: Dynamic Leadership for '77." Special interest sessions slated for the program include "Cost of Care," "Quality of Care" and "Toward a National Health System—A Global Perspective." A seminar titled "Assault on Professionalism" will be the forum for a discussion of current and widespread attacks on the various professions. Seven optional seminars on topics not planned for the regular meeting will be offered on Jan. 20.

SPECIAL NOTICES

YALE UNIVERSITY SCHOOL OF MEDICINE
Sterling Hall of Medicine
December 2, 1976 First session:
"RECENT ADVANCES IN PEDIATRICS FOR THE PRACTITIONER"
A Bi-annual Continuing Education Program
jointly sponsored by:
Hezekiah Beardsley Society &
Departments of Pediatrics at
University of Connecticut School of Medicine &
Yale University School of Medicine
Approved for 4 hours of AMA Category I Credit
Spring Date: to be announced (at UCONN)
Registration Fee—$6.00
For further information please contact:
Office of Graduate & Continuing Education
333 Cedar St.
New Haven, CT. 06510
432-4582

YALE UNIVERSITY SCHOOL OF MEDICINE
The Department of Psychiatry
December 3-4, 1976
"PROBLEMS & POSSIBILITIES OF MID-LIFE DEVELOPMENT"
led by
Daniel Levinson, Ph.D.
A Weekend Workshop For Health Professionals, Educators and Researchers

The Workshop will feature:

Theory and findings regarding adult development from 18-50.

Experientially oriented discussions.

Application of theory and research to change-oriented endeavors with adults.

Registration is limited to a maximum of 40 participants.

Registration Fee: $75.00 Payable to Yale University.

This conference is approved for 11 hours of AMA Category I Credit.

For further information, please contact:

Office of Graduate and Continuing Education
Yale University School of Medicine
333 Cedar St.
New Haven, CT. 06510
432-4582

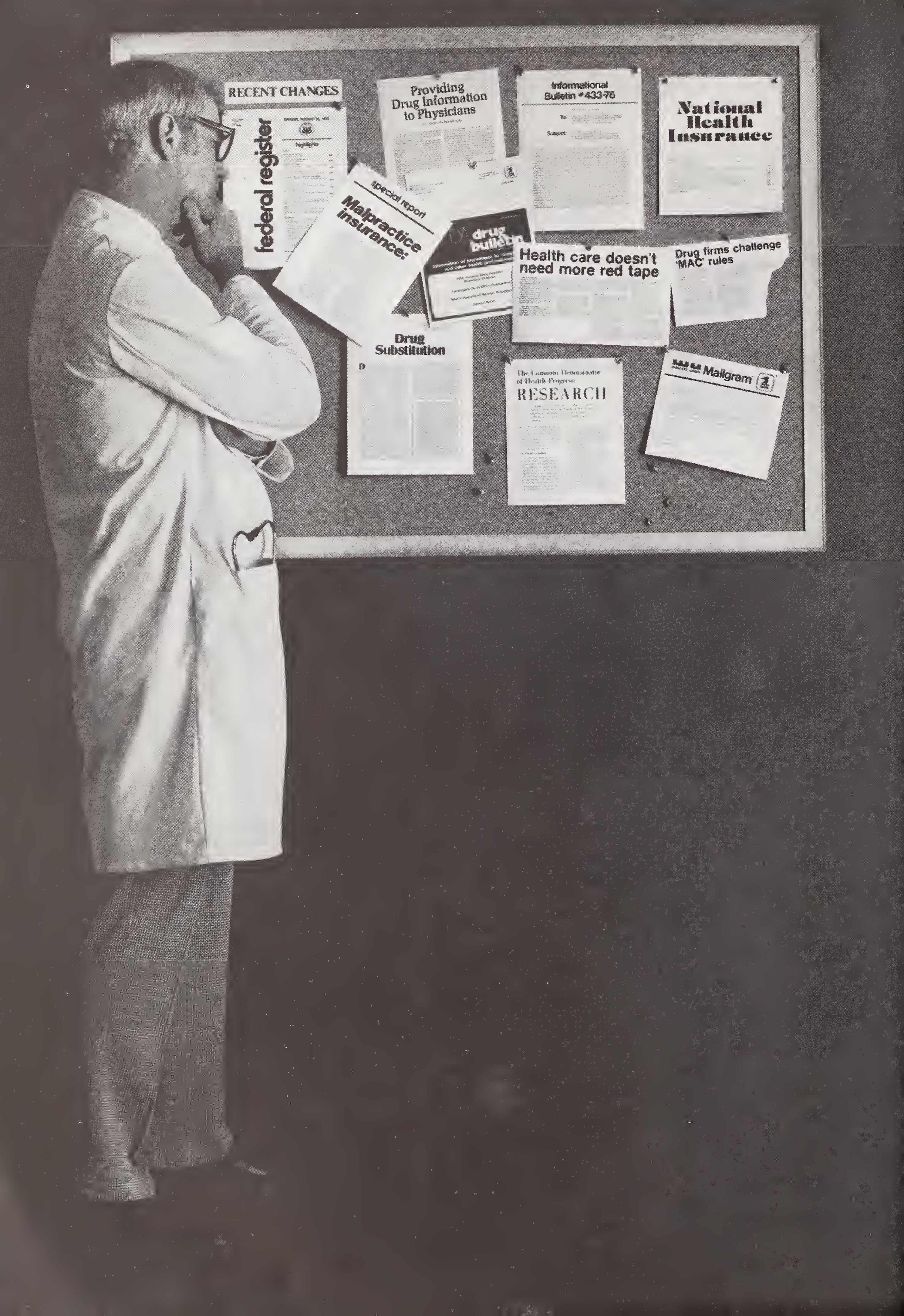
YALE UNIVERSITY SCHOOL OF MEDICINE
March 24 and 25, 1977

"TRANS-SPHENOIDAL SURGERY OF THE PITUITARY GLAND"

A two-day postgraduate course to be given by the faculties of Otolaryngology, Neurosurgery, and Diagnostic Radiology at the Yale University School of Medicine

This course is approved for 14 hours of Category I Credit.

Further information and enrollment forms may be obtained from: Office of Graduate and Continuing Education, Yale University School of Medicine


RECENT CHANGES
federal register
highlights
Providing Drug Information to Physicians
Informational Bulletin #433-76
To:
Subject:
National Health Insurance
special report
Malpractice insurance:
drug bulletin
Health care doesn't need more red tape
Drug firms challenge 'MAC' rules
Drug Substitution
The Common Denominator of Health Progress:
RESEARCH
Mailgram

THERE ARE A LOT OF PEOPLE GETTING BETWEEN YOU AND YOUR PATIENT.

Medicine today is in the spotlight, subjected to all kinds of scrutiny. Your control over patient therapy is being monitored, judged and occasionally abrogated, sometimes by unknown third parties.

The worry is that in the wake of this focus, the relationship between you and your patient will be weakened, without offsetting benefits. Consider three examples:

Drug substitution In most states, pharmacy laws, regulations or professional custom stipulate that your non-generic prescriptions be filled with the precise products you prescribe. But in the last five years, a dozen or more State laws have been changed, permitting the pharmacist in most cases to select a product of the same generic drug to fill any prescription.

Ironically, this dilution of physician control has taken place against a background of growing evidence that purportedly equivalent drug products may be inequivalent, since neither present drug standards nor their enforcement are optimal. In fact, the FDA itself says it has not enforced the same standards for hundreds of "follow-on" products that it had applied to the original NDA approvals. Thus physician control over patient therapy is being eroded with a risk that patients may be exposed to drugs of uncertain quality.

The major advertised claim for substitution is reduced prescription prices for consumers. Yet no documentation of any significant savings has been produced.

MAC Maximum Allowable Cost, MAC for short, is a Federal regulation designed to cut the Government's drug bill by setting price ceilings for drugs dispensed to Medicare and Medicaid patients. Unless the prescriber certifies on the prescription that a particular product is medically necessary, the Government intends to pay only for the cost of the lowest-priced, purportedly-equivalent, generally-available product. The effect of the program may be that elderly and indigent patients will be restricted to products which someone in Washington believes are priced right. Practicing doctors will have little to say about administration of the program, since Government will have absolute authority to make its choices stick.

The drug lag The future of drug and device research depends upon a scientific and regulatory environment that encourages therapeutic innovations. The American pharmaceutical industry annually is spending more than $1 billion of its own funds and evaluating more than 1,200 investigational compounds in clinical research. Disease targets include cancer, atherosclerosis, viruses and central nervous system disorders, among others. But there is a major barrier to the flow of new drugs to your patients: The cost of the research is more than ten times what it was, per product, in 1962; and whereas governmental clearance of new drug applications took six months then, it commonly consumes two years now.

The FDA needs adequate time, of course, to consider data. But it is equally clear that the present approval process contributes to needless delay of needed therapy. That's why the increased efficiency of the drug approval process is vital to all our futures.

If these issues concern you, we suggest that you make your voice heard—among your colleagues and your representatives in State legislatures and in Washington.

It could make a difference in your practice tomorrow.

P·M·A

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W., Washington, D.C. 20005

FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511
Telephone 865-0587

Francis G. Sweeney
Assistant Executive Director
Public Affairs

William R. Richards, M.D.
Executive Director
Josephine P. Lindquist
Associate Executive Director

Leonard R. Tomat
Assistant Executive Director
Scientific Activities

Summary of Actions
Council Meeting
Wednesday, September 29, 1976

Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. G. W. Van Syckle, were: Drs. Friedberg, Freedman, Backhus, Johnson, Hess, Canzenetti, Bradley, Cramer, Fabro, Kamens, Robinson, Harkins, James, Mendillo, Krinsky, Sonne, Whalen, McGarry, Beck, Ahrens, Magram, Eslami, Barrett, Zlotsky and Middleton.

Also present were: Mrs. Lindquist, Mrs. Arafeh (CSMS Auxiliary), Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Spitz, Nolan, Sadowski, Vidone and Parrella.

In Memoriam—Morris A. Granoff, M.D.

Following the call to order, and before proceeding with the business meeting, the Council VOTED unanimously to adopt a resolution memorializing Morris A. Granoff, New Haven, who died on August 22, 1976. Dr. Granoff served as a member of the Council for many years and was a past president of the Society. The text of the resolution follows:

Morris A. Granoff, M.D.
1914 - 1976

WHEREAS: Morris A. Granoff, M.D., served the Connecticut State Medical Society in many roles, always with the greatest devotion and the fullest measure of his considerable talents and capacities; and

WHEREAS: His service brought honor not only to him but to the Society; and

WHEREAS: He was not only a wise counselor and admired and respected colleague but also a devoted husband and father; and

WHEREAS: Morris A. Granoff was devoted to the highest standards of ethics in his professional and in his personal life; and

WHEREAS: The members of the Council of the Society feel sorely bereft through the loss of his honesty, his wisdom and, most of all, his impressive ability to focus on immediate problems against an ever-present backdrop of ethical principles not always obvious to everyone; therefore be it

RESOLVED: That the Council of the Connecticut State Medical Society note with sorrow the passing of a distinguished colleague and valued friend, Morris A. Granoff, M.D., New Haven, and convey heartfelt sympathy and condolence to the members of his family on the great loss the Council shares with them.

Introduced by Jerome K. Freedman

Following adoption of the resolution, the Council members stood to observe a moment of silence in memory of Dr. Granoff.

Routine Business

Life Memberships

It was NOTED to approve applications for Life Membership received from the following eligible Life Members:

Vincent Annunziata, R. D. 3, Patricia Lane, Newtown.
Anthony, A. Apuzzo, 131 Toilsome Hill Road, Fairfield.
Vincent Balletto, 535 Thompson Avenue, East Haven
Richard I. Barstow, The Village Green, Norfolk
John A. Chasnoff, 328 Main Street, West Haven
Frederick B. Hartman, 342 Montauk Avenue, New London
Leon Kaplan, 881 Lafayette Boulevard, Bridgeport
Carl H. Wies, 115 Huntington Street, New London

Election of Student Members

It was VOTED to elect to Student Membership three Connecticut residents who are attending medical schools in the United States as follows:

Catherine M. Butkus, 12 Rozun Circle, Prospect, Conn.
New York Medical College - Class of 1977
Pre-Med: Syracuse University
Parent: William Butkus (Deceased)

Bruce R. Croffy, 16 Silvent Avenue, Westport, Conn.
Tuftus University - Class of 1980

Pre-Med: Sacred Heart University - Boston College
Parent: John A. Croffy, Sr.

Scott L. Wetstone, 60 Horseplain Road, New Britain, Conn.
University of Connecticut - 1979
Pre-Med: Wesleyan University
Parent: Howard J. Wetstone

Old, New and Special Business

Resignations, Appointments, Etc.

(a) *Cancer Coordinating Committee:* It was VOTED to accept the resignation of Carlton MacDonald, Torrington, from membership on the Committee

(b) *Committee on Medical Aspects of Sports:* It was VOTED to accept the resignation of Joseph F. J. Curi, Torrington, from membership on the Committee. It was further VOTED to appoint Elizabeth S. Lamb, West Hartford, to membership on the Committee.

(c) *Committee on Public Health:* It was VOTED to accept with regret the resignation of Gunar N. Bohan, formerly of Meriden, from membership on the Committee. Noting that the reason for Dr. Bohan's resignation was transfer of her practice to the State of Georgia, it was further VOTED to request the President to write a letter to her in recognition of her past valuable services to the Society as a Committee member. Finally, it was VOTED to appoint to membership on the Committee Harold Lipton, of Hartford.

(d) *Connecticut Public Health Council:* Acting on a request from Governor Grasso, the Council VOTED to recommend for her consideration for appointment to membership on the Public Health Council the following: Edward A. Kamens, Fairfield; Clarence W. Harwood, Middletown. The appointment of one physician will be made to complete the unexpired term (until 1981) of Norman H. Gardner, deceased.

(e) *Nominee for Appointment to Board of Examiners for Physical Therapists:* It was VOTED to table action on a telephone request received from the Governor's office that the Council make a second nomination for appointment to the Board for the reason that she is "unable" to appoint a nominee previously submitted by the Council. No response has been received from the Governor's office to several requests by CSMS Staff for a letter of explanation of her "inability" to appoint the first nominee.

(f) *Appointment of AMA Alternate Delegate:* It was VOTED to postpone to the next meeting consideration of appointing an AMA Alternate Delegate to replace Morris A. Granoff, New Haven, deceased. At the time the tabling action was taken, the names of Stewart J. Petrie, Ansonia, and Guy W. Van Syckle, Danbury, had been placed in nomination.

Report – Committee on Public Health re Swine Influenza Immunization Program

It was VOTED to receive as information the subject report of the Committee and a number of related printed materials. It was further VOTED to approve numbered paragraphs (1) through (6) of the subject report which were primarily informational concerning developing plans for implementation of the immunization program in Connecticut. After thorough discussion of a recommendation of the Committee concerning suggested limitation on charges made by physicians for immunizations performed in private settings, the Council took actions as follows:

1. *Physician Participation in the Immunization Program:* Voted to encourage all Connecticut physicians to participate actively in the current public health effort for widespread immunization against the swine influenza virus, both in their private offices and as volunteers in public (clinic) settings.
2. *Concerning Physicians' Charges for Immunizations:* Noting that the Connecticut State Medical Society has never maintained or sought to impose on its members any schedule of fees for services, either minimum or maximum, the Council voted to urge the 4,600 physician members of the Society to be guided by the following suggestions regarding charges for swine influenza immunization services:

(a) That no charge be made by physicians for immunization services rendered as volunteers in public (clinic) settings.

(b) That for immunization services rendered in their offices or other private settings, any charge made by physicians be only minimal.

Reports – Fiscal Subcommittee

The Council acted on reports submitted by the Fiscal Subcommittee as follows:

(a) *Contribution to Cancer Consortium Exhibit:* VOTED to approve a recommendation of the F.S. that the Society contribute the sum of $70 to the Connecticut Cancer Consortium to help defray the costs of a CCC exhibit to be shown at a "Black Expo" function to be held in New Haven on October 28-31, 1976.

(b) *Subsidy of Medical Students' Attendance at Boston Meeting:* VOTED to approve a recommendation of the F.S. that the Society reimburse up to four students from the Yale and UConn medical schools at the rate of up to $25 each (Total: Up to $100 for each medical school) to defray transportation costs incurred by their attendance at a Workshop to be put on by the American Medical Student Association, Boston, Mass., the last weekend in October. *N.B.:* The Fiscal Subcommittee will consider and report at a later time on two other requests for transportation subsidy to Chicago meetings to be held in 1977.

Bylaws of Connecticut Cancer Consortium

It was VOTED to receive as information a set of proposed bylaws which will convert the Consortium into a Federation. It was further VOTED to authorize continued participation of CSMS in the Connecticut Cancer Consortium in its new federated form.

Follow-up Report on the FTC Complaint

It was VOTED to receive as information two communications from CSMS legal counsel, which indicated that the ultimate defense of the Society and NHCMA against the FTC complaint might have to be continued for many months into the future. It was further VOTED that, in the "Report of the Council" to be presented to the semi-annual meeting of the House of Delegates (11/17/76), a comprehensive and up-to-date report of the Council's actions to defend both CSMS and NHCMA against the FTC complaint be submitted to the House; and that the Council recommend that the House endorse the actions taken by the Council thus far and take such other steps as may be deemed necessary to provide for continuance of the CSMS-NHCMA defense against the FTC complaint.

In a related action, the Council VOTED to instruct the Fiscal Subcommittee, in preparing the budget for 1977, to consider the anticipated costs of defending against the FTC complaint during fiscal 1977 and adjust 1977 membership dues accordingly.

Report – Committee on Professional Liability

Noting that, on 6/17/76, the Council had received as information a draft of a policy statement of the Connecticut Hospital Association on "Informed Consent" and a comment received from Philip R. Dunn, CSMS legal advisor on professional liability matters, the Council VOTED to approve and implement a report of the Committee on Professional Liability to which the CHA document and Mr. Dunn's comment had been referred for study. The report and recommendations of the Committee follows:

1. It is recommended that the "Model Policy on Informed Consent" of the CHA be received and placed on file.
2. It is the opinion of the Committee that this document, prepared by Attorneys Tilson and Eisner of the firm of Wiggin and Dana, is a good basic resume of the responsibilities of the physician for procuring informed consent.
3. It is recommended that this document he given the widest possible dissemination to the CSMS membership, excluding the forms found on pages 21-27.
4. It is recommended that the Society urge its members to take cognizance of the often verbalized, but never formalized, position that it is in the best interest of the patient that the physician discuss openly and frankly the complications of any procedures that involve risk and that the extent of the disclosure must be reserved to the judgment of the physician and his/her appraisal of the needs and capacities of the individual patient.

   Any informed consent form should be both brief and broad because a person in situation of stress could easily claim inability to comprehend a long, technical and complex document. Because of the myriad of possible complications the most conscientious practitioner could not possibly cover them all.
5. It is recommended that the medical staff of each hospital establish the mechanism by which each physician would obtain and document an informed consent.
6. It is the recommendation of the Committee that the issues surrounding informed consent be constantly reviewed by the appropriate committees and/or councils of the Connecticut State Medical Society and the Connecticut Hospital Association.
7. It is recommended that a copy of these recommendations be forwarded to the Council on Professional Services of the Connecticut Hospital Association, CSMS Committee on Hospitals and to the president of the medical staff in each Connecticut hospital.

Report – Committee on Allied Medical Services

It was VOTED to approve a "Position Statement on Health Manpower" submitted by the Committee. The statement had been drafted by the Connecticut Joint Practice Committee (made up of CSMS and Connecticut Nurses Association representatives) and is simultaneously being submitted to the CNA Board of Directors for approval. At such time as word is received that the statement has been given approval by CNA, the Council will consider publishing the statement for the information of members of the Society. In brief, the statement deals with the rapidly increasing numbers of health care personnel having "a narrow range of skills", their cost in relation to their ability to improve the quality and delivery of health care services and the establishment of a "goal" to test new types of health manpower in terms of need, effectiveness, efficiency, economy and cost.

Communications re Commission on Hospitals and Health Care

The Council VOTED to receive as information two communications from members of the Society which made critical comments regarding recent actions of the subject Commission which made cuts in the proposed 1977 budgets of a number of general hospitals in the state and urged the Council to take a position in the controversy that has developed between the Commission and the hospitals concerned. The Council also heard the verbal presentations made by David A. Grendon, present CSMS representative on the Commission, and Sidney L. Cramer, CSMS representative on the Commission from 1973-76, both of which furnished information on the Commission's point of view regarding hospital budget and budget cuts. A discussion of the foregoing information ensued. No further action was taken.

Statement on Allegations of Medicaid Fraud

It was VOTED to approve the draft of a letter to Governor Grasso, prepared by Staff, which informed her of the Society's condemnation of any and all fraudulent acts by physicians under the Medicaid program; called on her to prosecute vigorously all cases of alleged fraud by physicians; and pledged the assistance of the Society and the eight County Medical Associations if such assistance is desired. It was further VOTED to send the approved letter to the Governor and to release to the communications media notice of the Council's subject actions.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on September 29, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

THE ART
OF
HEALING

A portfolio of 12 prints
Limited edition of 250

This selection of handsome prints has been reproduced from the Clements C. Fry Collection, Yale University Medical Library. The selection represents various periods and medical specialties. Each print measures 12½" x 17" and is accompanied by historical data. Perfect for framing. Price $125 ppd. (Connecticut residents add $8.75 sales tax.) Please return within 10 days for full refund if not entirely delighted.

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Detail

OBITUARY

Morris A. Granoff, M.D.
1914—1976

Our friend and colleague, Morris A. Granoff, former president of our Society, died most suddenly on the 22nd of August 1976. He was a man of multiple talents — physician, husband, father, leader, talented debater, sagacious counselor to the Society and friend. His love of learning and innate youthfulness is attested to by much he did, by much he felt remained to be done and not the least by his attaining a Master's Degree in Public Health from Yale University fifteen years after graduation from the University of Chicago School of Medicine.

I admired him for his logical, incisive and inquisitive mind. But, I most treasured an image of this nation and of our profession's place in it that he unfolded to me. This image was one of innate freedom, until recently treasured and protected, but now under attack from many quarters and, most worrisome, too much from within Medicine. Morris believed to his core that the best medicine could only be practiced in a one-on-one relation between doctor and patient. It is a fragile interaction at best and Morris worried, as was his wont, that this century's increasing depersonalization and its lust for the technical and scientific threatened to destroy this tenuous thread.

Morris devoted much of his life to the education of his colleagues to the realities of confrontation between medicine, practiced with love and an innate wonder at life and the living, and "Health Delivery", practiced all too often with an eye only to efficiency and sadly to the bottom line of cost. I do believe he succeeded in this endeavor among those in our profession who were privileged to know and work with him.

If a very recently begun tide of feeling noted in various countries of the world continues to swell, Morris might be happy to know he played a part. If an increased reverence for the individual, for his variation from others equally individual and his protection from depersonalized planning and planners should result, as I hope it will, Morris would feel his battles to have ended in victory. It is up to us remaining to carry on down the road he helped point out to us, and this is how I will remember my friend Morris A. Granoff, Physician.

Jerome K. Freedman, M.D.

In Memoriam

Ashcroft, Allan D., College of Physicians, Columbia Univ., 1935. Dr. Ashcroft was a practicing physician in the Fairfield area since 1936. He was a Lieutenant in the U.S. Navy, WW II; also Captain U.S.M.C. Reserve, 1944-46. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Ashcroft died August 1, 1976, at the age of 69.

Hines, Thomas, University of Pittsburgh, 1942. Dr. Hines was the medical director of Gaylord Hospital for 10 years. He received numerous honors for his contributions to the field of physical rehabilitation and in 1954 was cited for outstanding service by the President's Committee for Employment of the Physically Handicapped. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Hines died August 12, 1976, at the age of 59.

Rogers, Orville F., Harvard Medical School, 1912. Dr. Rogers came to Yale University in 1916 as a medical assistant in the university Health Department. In 1921, he was promoted to assistant director of the Health Department and in 1936 became the director, retiring in 1955. During World War I he served in the U.S. Army Medical Corps as a Major. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Rogers died July 28, 1976, at the age of 89.

PHYSICIAN PLACEMENT SERVICE

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Surgery (General): Wishes to return to the East. In or near New Haven or Hartford. Board Certified. Experienced, stable, 46 years old, married. Franklin Horowitz, M.D., 3145 Lama Avenue, Long Beach, CA 90808. (213) 430-7055.

Emergency Medicine or Industrial Medicine or Anesthesia: Connecticut license. Wishes to return from Ireland. Interested in Southern Connecticut or Westchester area. Board eligible in anesthesia. 45 years old, married. Resume on file at CSMS. Available January 1977.

Anesthesiology: Available now. Connecticut license. DARCS from London, England. F.A.C.A. 17 years experience. Instructor at Albert Einstein College of Medicine. 42 years old. Married. B.K. Basak, M.D., 64 Roundtree Drive, Plainview, NY 11803.

Dermatology: Board eligible. Available July 1977. Married. 27 years old. Interested in solo, group or associate practice. Residency at New York Medical College. M.D. from Downstate Medical Center, Write CSMS—B.B.K. Derm.

Dermatology: Available October 1977. Group or associate practice. Interested in Litchfield County. Presently at Geisinger Medical Center, Penna. Yale graduate. M.D. from University of Penna. Served in U.S. Army. 31 years old. Harry C. Stone, M.D., 202 Laura Drive, Danville, PA 17821.

Dermatology: Available now. Connecticut license. Presently full time Associate Professor of Dermatology at Temple University. 54 years old. Princeton undergraduate. Harvard M.D.; U.S. Navy. Alan D. Watson, M.D., 3322 N. Broad Street, Philadelphia, PA 19140.

Internal Medicine (Gastroenterology): Available August 1977. M.D. from St. Louis University. Internship and residency at Cornell. Fellowship at Strong Memorial, University of Rochester. Board eligible. Special interest in endoscopy. Contact W.M.B.—c/o CSMS.

Internal Medicine (Cardiology): Available July 1977. Connecticut license. Board certified. Completing fellowship at Waterbury Hospital. Desires group practice. Undergraduate degree from Penna. State. M.D. from Jefferson Medical College. Internship and residency at Thomas Jefferson University Hospital. Stuart M. Deglin, M.D., 4-C Staunton Road, Farmington, CT 06032. (203) 677-0132.

Internal Medicine (Cardiology): Available July 1977. Board certified. Desires group practice in medium sized community. Completing fellowship at University of Penna. Internship and residency at University of Michigan. Trained in echocardiography, vectorcardiography and CCU work. Nicholas H. Dienel, M.D., 625 Woodcrest Avenue, Ardmore, PA 19003.

Internal Medicine: Available July 1977. Board eligible. M.D. from Boston University. Residency at University Hospital in Florida. Group or associate practice. Daniel Dress, M.D., 5000 San Jose Blvd., #291, Jacksonville, FL 32207.

Internal Medicine (Gastroenterology): Available August 1977. Board certified. Fellow at George Washington University. Trained at Montefiore Medical Center. M.D. from George Washington University. Leonard D. Ehrlich, M.D., 2200 Columbia Pike, #1103, Arlington, VA 22204.

Internal Medicine (Gastroenterology): Board eligible. Desires straight GI or Internal Medicine in multispecialty group or partnership. Available July 1977. M.D. from University of Pittsburgh. All advanced training at Duke University Medical Center. Robert D. Fusco, M.D., 1416 Wyldewood Road, Durham, NC 27704.

Neurology: Board eligible in Internal Medicine and Neurology. Prefers group practice. M.D. from Temple. All other training at University Hospital of Cleveland. Extensive training in electromyography. 30 years old. Available July 1977. Robert W. Page, M.D., 3800 Parkdale Rd., Cleveland Hts., OH 44121.

OB/GYN: Board eligible. Available July 1977. Group or associate practice. 29 years old. M.D. from Albany Medical College. Internship and residency at University of Michigan Hospitals. Stephen M. Cohen, M.D., 2281 Glencoe Hills Drive, Ann Arbor, MI 48104.

OB/GYN: Board eligible. Connecticut license. Available July 1977. M.D. from New York Medical College. Residency and internship at Kings County Hospital in Brooklyn. Solo, group, or associate practice. 32 years old. William L. Scheiderman, M.D., 1655 Flatbush Avenue, Apt. A-1503, Brooklyn, NY 11210.

Ophthalmology: Board certified. Available July 1977. Associate, solo or group practice. M.D. from Albert Einstein College of Medicine. Residency at North Shore University Hospital (Cornell). Presently in U.S. Army. 30 years old. Married. Ira H. Asher, M.D., 5842 A. Brett Dr., Fort Knox, KY 40121.

Ophthalmology: Board certified. 2 years in the U.S. Navy Medical Corps. M.D. from Mount Sinai School of Medicine (AOA). Internship and residency at University of Michigan Medical Center. Edward Feinberg, M.D., 2819 Renfrew Avenue, Ann Arbor, MI 48105.

Ophthalmology: Available early summer of 1977. Board eligible in 1976. Completing fellowship at University of Tennessee. M.D. from Georgetown. Internship at French Medical Center in San Francisco. Residency at Case Western Reserve, Cleveland. 29 years old, married. Desires solo, group or associate practice. Complete resume on file. K.R.F.—Ophth. c/o CSMS.

Ophthalmology: Available June 1977. Board eligible. Diplomate of National Boards. B.A. from Columbia; M.D. from N.Y.U. Internship and residency at Montefiore-Einstein. 29 years old, married. Solo, group or associate practice. References available. Howard B. Goldman, M.D., 160 Cabrini Blvd. NY, NY 10033.

Ophthalmology: Board eligible. Connecticut license pending. Married to a dermatologist. 31 years old. M.D. from Downstate Medical Center. Internship and residency at Einstein and Montefiore Hospitals. Complete resume on file E.S.K.—Ophth. c/o CSMS.

Ophthalmology: Connecticut license. Board eligible. Wishes to return to CT in solo or group practice. Graduate of New Haven high school. B.A. from University of Pennsylvania; M.D., from Georgetown. Internship at Hartford Hospital; residency at Long Island Jewish-Queens Hospital Center and at Georgetown University. 2 years in the U.S. Army. 7 months at Walter Reed. Extra year of residency in N.Y.C. Available July 1977. Louis E. Mark, M.D., 2019 Windham Lane, Wheaton, MD 20902.

Ophthalmology: Board certified. Desires associate, solo or group practice in medium sized community. 31 years old. Completing active duty in U.S. Navy. B.A. from University of Chicago; M.D. from Jefferson Medical College; Internship at University of Penna.; Residency at Barnes Hospital, Washington University. Fellowship: Glaucoma, Wills Eye Hospital. Complete resume on file at CSMS. M.E.S.—Ophth.

Family Practice: Available Summer of 1977. Board eligible. Medium or small community with group practice, if possible. M.D. and M.P.H. from University of No. Carolina. 30 years old. Completing program at Highland Hospital, Rochester, New York. Lloyd K. Comstock, M.D., 208 Aberdeen Street, Rochester, NY 14619.

Family Practice: July 1977. Board eligible. Interested in medium sized community in group, institutional or industrial practice or multispecialty group. M.D. from University of Pittsburgh. Completing training at York Hospital, York, PA. 28 years old. Married. Gary M. Cummins, M.D., 124 Oak Ridge Drive, York, PA 17402.

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Family Practice: Available August 1977. Board certified. Presently in practice. M.D. from Jefferson Medical College. Completed Family Practice at Wilmington Medical Center, Delaware. 30 years old. Married. Group or associate or institutional practice desired. Stephen P. Flynn, M.D., 245 Hollywood Blvd., Havelock, NC 28532.

Family Practice: Available July 1977. Prefers location near college or university in associate type practice. M.D. from Ohio State. Enrolled in Family Practice Program at MacNeal Memorial Hospital, Berwyn, Illinois. 27 years old. Jerry A. Friemoth, M.D., Family Practice Center, MacNeal Hospital, Berwyn, IL 60402.

Family Practice: Available July 1977. Associate practice in college town. Board eligible. 29 years old. Married. Yale graduate. M.D. from University of Illinois. Jonathan H. Jaffe, M.D., 3249 S. Oak Park Avenue, Berwyn, IL 60402.

Family Practice: Completed Family Practice Program in 1976. Desires group practice in CT. Attended Avon Old Farms School, Avon. M.D. from University of Minnesota. Edward P. LaMotta, M.D., 183 Little Canada Road, #219, St. Paul, MN 55117.

Family Practice: Available August 1977. Board eligible. FLEX. Associate practice in medium sized community. 29 years old. Married. M.D. from University College, Galway, Ireland. Completing Family Practice Residency at University of Rochester, N.Y. John B. McGuckin, M.D., 570 Linden St., Rochester, NY 14620.

Family Practice: Available August 1977. Board eligible. Group practice in large or medium sized community. M.D. from Jefferson Medical College. Presently at York Hospital, York, PA. 27 years old. Married. Anthony D. Molinaro, Jr., M.D., 1927 Queenswood Drive, H-106, York, PA 17403.

Family Practice: Presently in US Navy. Available September 1977. Board eligible. Solo or small group practice desired in medium sized community. Princeton graduate. M.D. from N.Y.U. Residency completed in 1975 at St. Joseph's Hospital in Syracuse, N.Y. 29 years old. Married. Peter J. Peff, M.D., Box 92, Rt. 1, Atoka, TE 38004.

Family Practice: Available July 1977. Presently on active duty. Board certified. Desires group practice in medium sized community. M.D. from S.U.N.Y. at Buffalo. 3 year Family Practice Program at St. Joseph's Hospital in Syracuse. 30 years old. Married. George M. Rosenfeld, M.D., N5 Phythian Road, U.S.N.A., Annapolis, MD 21402.

Family Practice: Available July 1977. Desires medium sized community in the northwestern section of Connecticut. Graduate of University of Rochester. M.D. from Upstate Medical Center. Internship at Bridgeport Hospital. Family Practice Program at Lynchburg, VA. Frederick W. Sloan, M.D., 408 Belvedere Street, Lynchburg, VA 24503.

Internal Medicine: Available July 1977. Board eligible. Interested in primary care. M.D. from Albany Medical College. Internship at Rhode Island Hospital. Residency at Albany Medical Center. Group or associate practice. 28 years old. Married. Michael R. Barnett, M.D., Box 98, R.D. #1, Altamont, NY 12009.

Internal Medicine: Board certified. Connecticut license. Completing GI Fellowship at UConn Medical Center. Available July 1977. Resume available. B-GI c/o CSMS.

Internal Medicine: (Cardiology) Group or associate practice in large community. 33 years old. Married. M.D. from Columbia P&S. Fellowships at Louisville General and Cincinnati General. Completed 2 years in US Army. Eugene W. Green, Jr., M.D., 260 Laurie Vallee, Louisville, KY 40223.

Internal Medicine: (Gastroenterology) Completing fellowship at University of VT. M.D. from University of Minn. Group or associate practice in large or medium sized community. Board eligible. 30 years old. Married. Completed duty in Air Force. Stephen E. Kaufman, M.D., 564 So. Willard Street, Apt. #9, Burlington, VT 05401.

Internal Medicine: Board eligible. Available July 1977. Trinity graduate. M.D. from N.Y. Medical College. Internship and residency at New England Deaconess in Boston. Desires group or associate practice in medium sized community. 29 years old. Married. Craig W. Markert, M.D., 40 St. Paul Street, Brookline, MA 02146.

Internal Medicine: (Hematology-Oncology) Board certified in I.M. Board eligible in oncology and hematology. Group or associate practice desired. M.D. from Albany Medical College. Fellowship at Dartmouth-Mary Hitchcock Medical Center. Available July 1977. R. Curtis Mills, M.D., RFD 349, Norwich, VT 05055.

Internal Medicine: (Nephrology) Board eligible. Available July 1977. Group or associate practice. 29 years old. Married. M.D. from Duke. Completing fellowship at Duke. 2 years in USAF. Complete resume on file at CSMS or write Box 3447, Durham, NC 27710.

Internal Medicine: (Infectious Diseases) Board certified ABIM. Group practice or associate arrangement desired. 30 years old. Married. M.D. from Albany Medical College. Completing fellowship at Brown in Providence, R.I. Thomas L. Parsley, M.D., Apt. 21, 1588 Main Street, West Warwick, RI 02893.

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(continued from page 810)

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The Journal of the Connecticut State Medical Society

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CENTENNIAL ISSUE: Medicine In Colonial America

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

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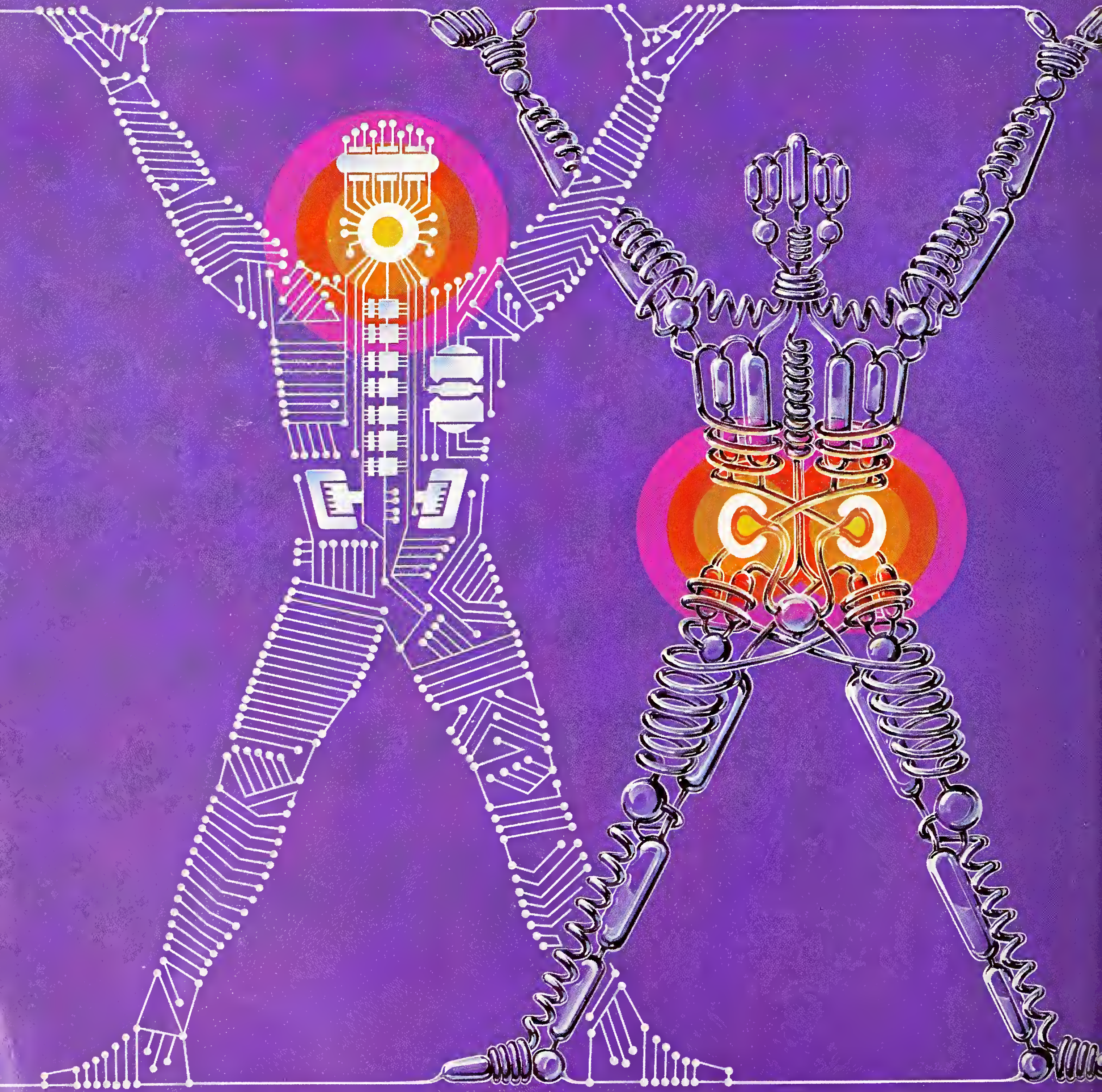

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INTRODUCTION

To A New World Indeed

Sherwin B. Nuland, M.D., Guest Editor

Society waits unformed, and is for a while between things ended and things begun.—Whitman

Walt Whitman, the poet of our America, the poet whose great heart speaks to the hopes of youth and the longings and fulfillments of our mature years, expresses, unwittingly, the state of American science and medicine as it was in the year of our nation's birth. In actual fact, *ending* but not yet *ended* is perhaps less lyrical but historically more accurate, and the additional truth is that we had indeed already begun, but the full crescendo of that beginning had not yet been heard.

What was ending was the long history of non-scientific medicine, and what was replacing it was an era in which the effects of the Enlightenment and the budding rudiment of technology were erupting into the perceptions of the healers. We were still treating with leeches and purges, but anticipating Jenner by innoculating against smallpox; we had not yet abandoned our search for abstract and sometimes meaningless terms like Phlogistic Diathesis to illuminate the dark expanse of our pathophysiologic ignorance, but we were beginning to come under the influence of Morgagni's correlation of autopsy findings with clinical observations; of 1200 physicians who served in the colonial army only 100 had medical degrees, but we had recently established two university medical schools, in Philadelphia and New York; the delivery of babies by other than midwives was considered a rape of feminine modesty, but by 1776 William Shippen had set the precedent that obstetrical deliveries were properly and most safely within the realm of the physician—and so it goes.

Two of the essays in this Bicentennial Issue of *Connecticut Medicine* describe the state of our art as it existed in the America of 1776. Dr. Gert Wallach's study deals with the climate of science and philosophy which was the physician's *milieu extérieur* in the Revolutionary period. What he is describing is clearly a climate in transition, a seed of observation and empiricism, and a soil rich with the nutriments of progress.

Ours is a guild of teachers. Hippocrates first told us that, and we have never forgotten his admonition, nor would we want to. We have always been concerned with the education of our professional progeny, knowing that when they in turn become the teachers the torch will never be lowered. It is fitting that our study of the colonial American medical student should have been written by an author who is himself a medical student, a keeper of the flame at the same time that he is one of its newest recipients. It is fitting moreover that he should be a student at Columbia, which as Kings College Medical School was the restless land's second college of medicine, having been founded only eight years before the Declaration of Independence. And finally, it is triply fitting that James Tait Goodrich should be seeking the MD/PhD, a degree that symbolizes the wedding of Medicine to Science, a wedding the origins of which are so thoughtfully described in his own and Dr. Wallach's studies. From the beginnings outlined in these two papers, the world has taken note of the fact that in our bicentennial year every Nobel Prize in Science and Medicine was awarded to workers both born and educated in the United States.

And so, the Bicentennial Issue begins with studies of the origins of American medicine—what about medicine in Connecticut? The Connecticut State Medical Society was, after all, founded in 1792, only shortly after the republic, and many of the young country's leading physicians were associated with this State. It is not generally remembered that in 1942 the Society published "The Heritage of Connecticut Medicine" to commemorate its first 150 years, and to describe its illustrious history and our own professional lineage. Many of the contributors to that volume have become part of this lineage, and their names are as significant to us as those they memorialized. Among them are: Creighton Barker, Harold Saxon Burr, Harry B. Ferris, Stanley Weld, George Blumer, Herbert Thoms, Harvey Cushing, Ira Hiscock, John F. Fulton, Hebbel Hoff and Samuel Harvey—all of them revered figures and most of them substantial influences on this journal.

Rather than review the history of Connecticut colonial medicine in our present issue, we have chosen to refer our readers to that book, edited by Dr. Thoms. To assure pride of place, we asked Dr. Melville Roberts to review once again his fascinating portrait of our state's first physician, Thomas Pell, which he originally presented in 1973.

Of all the burgeoning specialties and subspecialties of medical practice none is more conscious of its history than that of Plastic Surgery. Dr. Felix

Freshwater's tour-de-force in our September issue is a graphic demonstration of that fact. Now he, Dr. Marvin Arons and Mr. Richard Hegel have provided us with a colonial vignette that is not only a tribute to its subject's Yankee ingenuity, but to their own skill at story-telling as well.

The last paper in our group is not strictly concerned with the Revolutionary period. However, it provides a unique opportunity to examine, through a primary source, the practice of medicine in the earliest days of the American navy. Dr. Ben Bradburn was lucky enough to find and perceptive enough to recognize the medical log of the *U.S.S. Constitution,* preserved and forgotten in the depths of the Yale Historical Library. Untouched by scholars, and still stained with the blood of one of its author's wounded patients, Amos Evans' chronicle of the battles and casualties of *Old Ironsides* has never previously been published. Dr. Bradburn presents it here, and we applaud his discovery and his contribution to the study of military medicine.

The celebration of our nation's 200th year is all but completed. Of American medicine, as always the inheritor of the ennobled tradition of its forebears, with pride in its sons and daughters and in itself, it may well be said, as Walt Whitman said on July 4, 1855:

Fresh come, to a new world indeed, yet long
prepared,
I see the genius of the modern, child of the real
and ideal,
Clearing the ground for broad humanity, the true
America, heir to the past so grand,
To build a grander future.

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Detail

The Mind of the Colonial Physician

Gert Wallach, M.D., M.P.H.

A. Towards A Scientific World Picture.

Medical history has many aspects. It might deal with the lives of physicians of the past, the medicines they used, the economic conditions under which they worked, how they were educated and kept up with the advance of science, what their ethics were, what they read and wrote, their participation in the political and social life of the community or many other areas. Let us examine ideas and explanations we can use to shed light on their intellectual environment.

We might begin by trying to evaluate colonial medicine's contribution to present-day achievements and errors. When the great physiologist Sir Michael Foster gave the Lane Lecture at the Cooper Medical College in San Francisco in 1900, he had this to say: ". . . We are, all of us, even in the farthest West, . . . Children of our Fathers. What we are is in part of our making, the greatest part of ourselves has come down to us from the past . . . . As what we think and say to-day will mingle with and shape the thoughts of men in the years to come, so in the opinions and views which we are proud to hold to-day, we may . . . . trace the influence of the thoughts of those who have gone before. Tracking down how new thoughts are linked to old ones, seeing how an error cast into the stream of knowledge leaves a streak lasting through many changes of the ways of man, noting the struggles through which the truth now rising to the surface, now seemingly lost in the depths, eventually swims triumphant on the flood we may perhaps better learn to appraise our knowledge, and the more rightly judge which of the thoughts of today is on the direct line of progress, ..."[1]

American doctors of the seventeenth and eighteenth century imported European thoughts and traditions and modified them to the conditions of the new world.[2]

Science did not triumph easily in the Western world. As in the Europe of the pre-Renaissance time and the sixteenth and seventeenth centuries religious doctrines had to be overcome first. The New England Puritan was intent on establishing God's Commonwealth in the wilderness. Everything was subjugated to religious convictions, and medicine was no exception. The "Jeremiad" propounded by the clergy without let-up caused as much fear as the fires of hell. They were based on Jeremiah VI; 17-19:

"Also I set watchmen over you,
Saying, 'Hearken to the sound of the trumpet',
But they said, 'We will not hearken.'
Therefore hear, ye nations,
....
Behold, I will bring evil upon this people,
Even the fruit of their thoughts,
.... "

Sin was the cause of sickness. "Sin was that which first brought Sickness upon a Sinful World, and which yett continues to sicken the World with a world of diseases. Our Sickness is in short, Flagellum Dei pro Peccatis Mundi."[3] Through illness "God was carrying on a controversy with His chosen people"[4] and as a consequence there was " divine and supernatural etiology of disease" and ritual, prayer, fast days and self-purification rites took on the role of cure and prevention.[5]

These convictions have not fully disappeared today; in Colonial America they were nearly unsurpassable barriers to the development of science. The Puritans were, however, not fully consistent in their convictions. Massachussetts enacted temporary Quarantine Laws in 1647/48 and then again in 1665 and 1677[6] and Connecticut in 1663.[7] Provisions for treatment in the modern sense were made also; the sick had to be kept alive in order to receive "spiritual treatment for his moral illness".[8] One wonders whether purges and bloodlettings were not only cures for the body but also cleaned one's soul.

All this made the clergyman peculiarly suited to act as medical practitioner. It seems that this was not the only reason for the predominance of the clergyman-physician until about 1750 (1700 in the major cities.) Very few lay-physicians practiced in New England during this period and the suffering people looked for help to the educated ministers[9] who learned their medical knowledge through the apprenticeship system. Many became outstanding healers.[10]

The monopoly of the ministers in directing the fate of the colonies was fading away when the British motherland established stricter control after the Restoration. Life of the Commonwealth based on the book of Deuteronomy was modified by the Common Law of England.[11] Believers in the tenets of the Church of England, the Baptists, the Quakers, the Antinomians, the Anabaptists and others started to become magistrates.[12] New ideas unfolded and flowered. Increase Mather, the representative of the party of the clergy, lost the Presidency of Harvard College in 1701[13] and scientific thinking began to take a firmer foothold.

DR. GERT WALLACH, Director of Health and Registrar of Vital Statistics, Waterbury, CT.

The new spirit did not start abruptly. The new has always its seeds in the past, in unheeded or disregarded ideas and findings. During the eighteenth century the ripening process accelerated.

We have already mentioned the quarantine laws. It should be added that in 1649 the Massachussetts Legislature passed the following law: "Forasmuch as the Law of God allows noe man to impaire the Life, or Limbes of any Person, but in a juditiall way; it is therefore ordered, that noe person or persons whatever, imployed at any time about the bodyes of men, women or children, for preservacion of life and health as Chirurgeon, Midwifes, Physitians or others, presume to exercise, or put forth any act contrary to the known approved Rules of Arte, in each Minstery and occupation, not exercise any force, vilence or cruelty upon, or towards the bodye of any, whether younge or olde. (no not in the most difficult and desprite cases) without the advice and concent of the patient or patients if they be mentes compotes, much less contrary to such advice and concent: upon such severe punishment as the nature of the act may deserve, which Law nevertheless, is not intended any from all lawfull use of their skil, but rather to incourage and direct them in the right use thereof, and inhibit and restreine the presumcious arrogancy of such as through presidence of their own skil, or any other sinister respects, dare boldley attempt to exercise any vilence upon or towards the bodyes of young or old, one or other to the prejudiss or hassard of the life or limbe of man, woman or childe."[14] The fact that this law gives to the sick the right to consent or deny any proposed treatment does not release the physician "to exercise, or put forth any act contrary to the known approved Rules of Arte . . . ." What were these approved rules?

There were hardly any rules which could be considered the absolutely right ones, just as today there are few which are undisputed. True, present medicine can rely on the authority of experiments; present medicine can be surer of itself. The Colonial physician did very little scientific research in the modern sense. He did have the help of some statistics (Connecticut started to require the registration which we call 'vital statistics' on June 3rd, 1644)[15] but medical experiments were rare. The Colonial physician leaned heavily on the findings of European authorities.

Europe during the sixteenth to eighteenth century was laying the foundations of modern medicine. In 1543 Andreas Vesalius published his 'Fabrica Humani Corporis' which based anatomy on dissection rather than on the interpretation of works of Galen. Gabrielus Fallopius wrote his great work in 1561 and William Harvey described the correct circulation of the blood in 1628, eight years after the Pilgrims landed on Plymouth Rock.[16] The great clinician Thomas Sydenham lived from 1624 to 1689,[17] René Descartes from 1596 to 1650, the founder of the Vitalist School George Ernst Stahl from 1660 to 1734 and Dutch Leyden reached its preeminence under Hermann Boerhaave (1668-1738) and his main student Albrecht von Haller (1708-1777).[16] Theirs and other men's findings influenced American Colonial physicians deeply and the latters' practices can only be understood if we understand the thoughts and experimental results of their European preceptors.

Only a few can be discussed here. When Marcello Malpighi died in 1694 the basis of modern morphological thinking had been laid, the ancient theory of the four humors had been destroyed and the microscope was used for biological research.[18] In the New World a body was dissected for teaching purposes for the first time by Doctors John Bard and Peter Middleton in 1775 and Dr. William Hunter, a student of the University of Edinburgh and a relative of the great William and John Hunter, gave lectures in anatomy and surgery in Newport, Rhode Island, in 1754-1756.[19]

The Colonial physician was also stirred by the new theories of budding chemistry and botany, and their applications to sickness as developed in the late fifteenth and early sixteenth century by Basil Valentine (Johann Estchenreuter) and Theophrastus Bombastus von Hohenheim usually called Paracelsus, for whom disease was the outcome of nature, as was healing. He recognized that "all things are poisons, for there is nothing without poisonous qualities. It is only the dose which makes a thing a poison." But he introduced also the "tendency to make men think that chemical inquiry, in contrast with physical inquiry, was in some way necessarily bound up with speculations about invisible agencies of a spiritual kind; . . ."[20] In these ideas he found an able follower in *Jean Baptiste van Helmont* who was born at Brussels, Belgium, in 1577.

Van Helmont is the father of Chemical Physiology. "Two souls lived in his breast." On the one hand he was a careful experimenter who proved that vegetables and flesh consisted mainly of water, who found carbon dioxide (which he called spiritium sylvestre) and was deeply interested in the idea of fermentation which set gas free. To this latter idea he came by the observation of alcohol formation:[21] "The juice of grapes, apples, berries, honey, and even bruised flowers and twigs, a ferment having been laid hold of, begin to bubble and effervesce, whence gas." He knew that this gas was not air; he thought that it was a form of water. He made fermentation the basis of his system of physiology. All changes of the body were based on fermentation. He recognized that the secretion of the stomach was acid, a knowledge which was lost completely during most of the eighteenth century, even by such great experimenters as R. A. Reaumur (1683-1752), Lazaro Spallanzini (1729-1783) and the great surgeon John Hunter (1728-1793).[22] This acid is "not the ferment itself, is only the organ or instrument of the ferment."[23] Van Helmont knew that the acid-chyle became "saline" in the duodenum but thought that this was brought about "by the vigour of transmutation."[24] Nevertheless he recognized the effect of the bile, another ferment in his view. The changes in the duodenum are the prelude of "sanguification" and he knew the concept of absorption.[25]

From here on, however, he enters the realm of mysticism, the heritage of his time: The absorbed food is in the liver endued with *natural spirits.* In the heart the natural spirits are converted into *vital spirits* and in the brain they are transformed into the *animal spirits* [26] and all these expressions are found in American literature through the nineteenth century.

He created the word "gas" because it sounded similar to chaos. His gas was carbon dioxide (but a carbon dioxide endowed with occult powers).[27]

We should not forget his ideas about the *sensitive and immortal soul.*[28] The possession of this soul differentiated the human from animals and plants. The sensitive soul governs all acts through specialized functions called archaei and the ferments in turn are the instruments of these archaei. Proof? One proof is that any deep emotion is always felt in the pit of the stomach. The sensitive soul is mortal and in living man coexists with the immortal soul. Before the Fall of Adam, man possessed only the immortal soul (the sensitive one was not yet created) and at that time this immortal soul did act directly on the archaei.[29]

Around 1700 the exact mathematical and physical thinking of Galileo, Borelli, Vesalius, Harvey and Newton overwhelmed all non-religious reasoning. Even chemistry and its not yet separated sister science of biological chemistry was directed into more rational tracks through the work of *Franciscus Sylvius* (1614-1672) who built the first chemical laboratory at Leyden and his pupils Nicholas Stensen (1638-1686), Regnier De Graaf (1641-1673) and others. But at the same time a violent reaction against the materialistic-mechanistical world picture began. This reaction was mostly expressed in the works of the brilliant *Georg Ernst Stahl* (born in Ansbach, Germany). He published his main work (Theoria Medica) in 1708. He was an expert chemist and is mainly known through his phlogiston theory of heat, demolished by Lavoisier in 1775.[30]

Stahl returned to the ideas of Valentine, Paracelsus and van Helmont when he maintained that the chemical processes within the living body, though superficially resembling the changes taking place in laboratory experiments, were always governed by the sensitive soul. Stahl's sensitive soul is not identical with van Helmont's; it is much simpler. Stahl's soul worked directly on the body's chemical processes; it did not need the intervention of the archaei. Furthermore, Stahl's sensitive soul is not mortal; it is the immortal principle "coming from afar, and at the death of the body returning to whence it came."[31]

After all, at autopsy the morphology of the dead body is undistinguishable from the living one. The mysterious something which keeps the body alive is the immortal sensitive soul also called the "vital" principle. When it departs, the body dies.[32]

Bodily activities "are carried out by the soul, the vital principle. . . ." They are not, as recent speculations suppose, dependent on accidental external conditions.[32]

It was a simple theory, the creation of a genius. It is the theory which is generally called "vitalism" or "animism". It would stand or fall with the tenet that there is a difference between anorganic and organic chemical processess. When this difference could no longer be maintained then the theory should have to be abandoned.

Probably the first serious objection came from *Hermann Boerhaave* (1668-1738) who occupied Franciscus Sylvius' chair at Leyden and was the teacher of half of Europe and of several Americans. Dr. Seth Bird of South Farms, Litchfield, Conn., the man who gave the first scientific address to the Litchfield County Medical Association in 1767* (and probably in Connecticut) is said to have been an enthusiastic follower of Boerhaave.[33] As to vitalism, Boerhaave had the following to say: " . . . There seems to be no need of a serious refutation of this hypothesis. . . . . . . For what difference is there between confessing that you are ignorant of the cause of a particular action, and attributing it to an obscure and fictitious agent, of which you cannot ascertain either the existence, or the nature, or the properties, or the mode of operation? . . . ." [34] It is obvious that with the Leyden School, that with Sylvius, with Boerhaave and the latter's student *Albrecht von Haller* (1708-1777) modern scientific method began to concern itself only with phenomena which can be proved. It is possible that Boerhaave reached this attitude because of personal experience. He had first studied for the ministry but found it difficult to be ordained as he had come under suspicion of being an adherent of the philosophy of Baruch Spinoza.[35]

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* The Litchfield County, (Connecticut) Medical Association is the oldest county medical association in existence continuously. From its beginning it was dedicated to raise the standard of medical practice and to maintain and promote ethics.

The Leyden School's attitude was a reaction to Stahl and created opposition of its own. *Robert Whytt* (1714-1766), who had been a student in Leyden, became Professor of Theory of Medicine in Edinburgh. He agreed with Stahl in regarding matter as incapable of starting motion, or of beginning any of the functions of life. He disagreed with Glisson and Haller who thought that muscular fibres could be called to action through physical stimuli alone.[36] *William Cullen* (1712-1790) was his successor and also the adored teacher of many American physicians of the late Colonial period. He was the teacher of the first faculty of the first Medical School of the thirteen Colonies at the University of Pennsylvania (founded 1765) and his ideas influenced American medicine tremendously. Cullen agreed with Whytt but added: "Although the soul is certainly a distinct substance from the body, it appears highly probable that the soul, while connected with the body, seldom acts, but in consequence of motions first excited in the latter; and that it is generally true, that "Nihil est in intellectu, quod non prius fucrit in sensu."[37]

Stahl's ideas had a great influence on many American physicians especially as they offered a ready made bridge between the totalitarian religion of the Puritan founders on the one hand and science on the other. *Dr. Elisha North* of Goshen and New London, Connecticut, (1771-1843) is the representative of the end of Stahl's Vitalism in America. In his book, "Science of Life," he writes: "We shall be content to believe . . . . the obvious properties of matter, whether living, dead or spirituous. The most important and perspicuous of those properties, is the changeableness of matter, especially when it is alive . . . . . . This is, in mental philosophy, an important fact, for many of those vastly diversified changes may, without doubt, at least in appearance, become intelligent and mental." And later: " . . ., but when it was unknown what the whole of vital powers were, especially in human beings, . . . , there might have been some excuse, or even expediency, in the opinion of many . . . as . . . good men have done, that the phenomenon of the mind in man was occasioned by an unknown principle, designated by the common name of soul. But if we have succeeded in pointing out all the powers which occasion vitality, such an excuse as we allude to no longer exists, at least among philosophers." And then he continues in a chapter called "On the social principle of Animation or Vitality, embracing more particularly that of mankind" to outline his psychology, a branch of knowledge in which many vitalists were interested.[38]

North's "Science of Life" was published in 1829. One year earlier, and probably unknown to him, *Friedrich Woehler* (1800-1882) had synthesized the organic compound urea in the test tube and thus demolished the vitalist theory experimentally.

B. Toward a Modern Epidemiology

Thomas Sydenham (1624-1689) was a London general practitioner. During most of his life he was a soldier in Cromwell's Army and a politician. Only after the Restoration in 1660 did he settle down to practice medicine. His clinical descriptions of chorea, dysentery, gout, malaria, measles, smallpox, syphilis and tuberculosis are masterpieces. His emphasis on bedside observation was invaluable.[39] He is called the English Hippocrates and the great Boerhaave is said to have stood up and to have lifted his hat when he mentioned his name.

In his preface to the third edition of his Collected Works he insisted that "the improvement of physics . . . depends (1) upon collecting a genuine and natural description, or history, of all diseases as can be procured; and (2) laying down a fixed and complete method of cure." Later he says: "In writing a history of diseases, every philosophical hypothesis which has possessed the writer in its favour ought to be totally laid aside, and then the manifest and natural phenomena of diseases, however minute must be noted with the utmost accuracy, imitating in this the great exactness of painters, who, in their pictures, copy the smallest spots of moles in the originals."[40]

The good he did can not be overestimated. Physicians before him reached their conclusions by reading authorities if they were still scholastics, or followed endless disputations if they were iatrophysicists (followers of Borelli, etc.) or iatrochemists (followers of Paracelsus and van Helmont). He revived the naturalistic and objective spirit of Hippocrates; in his observations the typical, the pathological process of well defined illnesses were indicated though he did not recognize this himself. His achievements were so great that his shortcomings were overlooked. As today, it was assumed that a man who is an expert in something must be right in everything. Most historical writings support this attitude as only right conclusions will be remembered because these pass the test of time.

Thomas Sydenham's anti-theoretical attitude was necessary in his time; he overdid it. Today we also believe that the medical scientist should strictly adhere to observations, and shun speculations about causes and the general importance of his findings unless provable through experiments. Theoretical considerations are rare in present-day scientific medical literature; the practicing physician can not work without them. He needs ideas concerning the cause and consequence of the illness he is working with even though they might be based on tentative conclusions. When he has no thoughts about the epidemiology or etiology he is unable to give advice about its prevention, its rectification, its cure—he is unable to fulfill his calling.

Thomas Sydenham proves a good example for this necessity. The man who preached: "every philosophical hypothesis which hath prepossessed the writer in its favor ought to be totally laid aside" was forced to accept prepossessed hypothesis about the cause of epidemic illnesses in order to explain, to prevent and to treat them. It is unfortunate that he who was living in the century of Francis Bacon, of René Descartes, of Baruch Spinoza was not a philosopher also. Epidemics and infectious disease were the main concern of the physician through the end of the nineteenth century. Sydenham should have recognized that at his time, through the works of Fracostorius, and Kircher and Redi and Leeuwenhoek, the groundwork for a sound theory of the cause of infection through living germs had been laid. However, he followed the unfortunate conceptions of Guillaume de Baillou (1538-1616), a French court physician,[41] and as a consequence uncounted multitudes of people needlessly died all through the colonial period and deep into the nineteenth century.

In his Section I, of his "Whole Works" entitled "acute diseases in general", Sydenham states that "epidemic distempers . . . . proceed from a latent and inexplicable alteration of the air, infecting the bodies of men" and "intercurrent or sporadic" acute diseases "arising from some peculiar indispositions of particular persons."[42]

In Chapter II he discusses this basic theory more fully. Season and atmosphere determine the nature of disease. He wonders whether "certain tribes of epidemic disorders constantly follow others, in one determined series, or circle, as it were; or whether they all return indiscriminately, and without any order, according to the secret disposition of the air, and the inexplicable succession of seasons."[43] There are mainly two kinds of atmospheric effects determining the nature of the illnesses: 1)" . . . Pleurisies, quinsies, and the like, . . . generally happen when an intense and long-continued cold is immediately succeeded by a sudden heat." 2) "There are various general constitutions of years, that owe their origin neither to heat, cold, dryness, nor moisture; but rather depend upon a certain secret and inexplicable alteration in bowels of the earth, whence the earth becomes impregnated with such kinds of effluvia, as subject the human body to particular distempers, so long as that kind of constitution prevails."[44]

From their time of occurrence Sydenham distinguishes between two groups of epidemics, the "vernal" and the "autumnal." The former includes measles and "vernal tertians"; the latter plague, smallpox, cholera morbus, autumnal dysenteries, tertians and quartans." The whole is more confused by his insistence on the "epidemic constitution" which influences all the epidemics of a particular year "inpressing upon their symptoms its own particular characteristics."[45]

In other words, he did not know specific diseases (except as an entity of symptoms); he knew only specific epidemics during which one symptomatic entity (illness in our present day understanding) develops (or expels) another according to the interplay between atmospheric qualities and "the occult influence ruling over the year."[46] Each new epidemic is "sui generis" demanding its specific therapeutics: " . . . , my chief care as soon as any new fever arises, is to wait a little, and proceed very slowly, especially in the use of powerful remedies; in the meantime carefully observing its nature and procedure, and by what means the patient was either relieved or injured."[47]

It should be admitted that occasionally he recognizes the importance of contagion. In the plague, e.g. the patient might receive "the effluvia, or seminium, from an infected person, either immediately by contact, or mediately by pestilential matter, conveyed from some other place." But when this happens: " . . . the whole air of that tract of land is quickly infected with the plague, by means of the breath of the diseased, and the vapour arising from the dead bodies, so as to render the way of propagating this dreadful disease by infection entirely unnecessary. . . ."[48]

In other words the "epidemic constitution" of the air (called miasma) influenced "from the bowels of the earth" became the central etiology of infections and other diseases. It was to plague the doctors all through the colonial period and many years thereafter.

These ideas of Sydenham did not remain without opposition. When in 1719 the plague broke out in Marseilles, France, the Lord of Regency of England directed that *Dr. Richard Mead* of London (born in Stepney in 1673) should be consulted on the question whether the importation of this dread disease could be prevented by quarantine, or whether it was an illness periodically generated in a given locality and beyond human control.[49]

In his "A Discourse on the Plague" which appeared first in 1720 Mead hardly mentioned the accepted theory of the constitution of the atmosphere as cause of epidemics. "Contagion is propagated by three causes, the air, Diseased Persons and Goods transported from infected Places." He thought that air itself transmits the plague and we should understand this if we remember that the transmission through vectors was not known at that time. But under "air" he understands nothing mysterious but: . . . "The Stinks of stagnant Waters in hot Weather, putrid Exhalations from the Earth; and above all: the Corruption of dead Carcasses lying unburied . . ." These cause disease. "From hence it appears to be Concurrence of Causes, that produces Diseases of this Kind." Plagues arise usually in the eastern and southern parts of the earth. "Nor do I think, that in this Island particularly there is any one Instance of a Pistilential Disease among us of great Consequence: which we did not receive from other Infected Places." Hot, moist air is highly favorable for the spread but it does not carry infection from place to place without the aid of infection of people or fomites. The air is important but it is not the primary cause of infections; it is a secondary transmitter. He recommended quarantine of travelers from abroad and of goods for 20 days.[50] It must also be mentioned that he did not believe that one illness can be changed into another[51] as Sydenham thought and Noah Webster and Benjamin Rush would postulate at the end of the century. *John Huxham* (1692-1768), the London correspondent of the Connecticut physician Benjamin Gale, developed Sydenham's theories further. He believed that plague, smallpox and pestilential fevers were contagious but wrote in his "Observations on the Air in Epidemic Diseases" that "the depraved Constitutions of the Atmosphere are the Causes of all epidemic Distempers, nay even the Increase and Duration of such as properly are stiled Contagious, greatle depend on those Constitutions." He did not, however, believe in influences from "the bowels of the earth" and limited the atmospheric impact to heat, cold, moisture, dryness, atmospheric pressure, etc.[52]

It was fortunate for the American colonies that smallpox was the infection which incited the greatest excitement and fear. Today this is difficult to grasp as smallpox is dying out all over the world. During the colonial period this illness exerted a dread and terror which can only be compared to the helpless horror which in our time infantile paralysis caused before the introduction of the Salk vaccine. Smallpox was the one disease about which everybody agreed that it was contagious. Even the famous lexicographer Noah Webster, one of the greatest enemies of the theory of the contagion admitted this in 1799.[53]

As early as May 1, 1721, Dr. William Douglass wrote to Caldwallader Colden that the smallpox epidemic in Boston (1721) affected only three adjacent towns, "which demonstrates that no constitution of air etc. can produce the small Pox without some real communication of Infection from a small Pox Illness."[54] As a consequence strict quarantine laws were introduced in the different legislatures. In Connecticut they were usually called "An Act for the Preventing the Smallpox being spread in this Colony" (October 1721) or later "An Act providing in the Case of Sickness" (after May 1728) which generally meant smallpox.[55]

Smallpox, however, was probably not the greatest killer of the colonial period. Dr. Ernest Caulfield wrote that " . . . diphtheria and dysentery, outranked smallpox as a cause of death."[56] The most frightful epidemic of any childhood disease in American history began in 1735. It was diphtheria (then also called cynanche, quinsy, angina, canker, bladders, rattles, hives, throat distemper and by other names) which appeared first in Kingston, New Hampshire.[57] In New Hampshire there were at least fifteen hundred deaths out of an estimated population of twenty thousand. In Essex County alone fourteen hundred died and in the whole of New England five thousand during the first five years of the epidemic. There are at least six instances in which eight deaths occurred in one family within a few days.[58] Doctors and ministers brought the illness home, "few suspecting that it was contagious."[59] Of greatest interest is the history of this illness in Boston. When it approached this city in October 1735 the selectmen consulted the physicians. It was the latters' opinion "That the said Distemper was Communicated by means of bad Air, and not by Contagion." The shrewd selectmen, who had observed that the epidemic had spread from town to town, did not accept the physicians' judgement. When a man called How came down with the illness they tried to have him removed to the pesthouse. The Courts, however, accepted the doctors' opinion and disallowed the officials' warrant. The selectmen applied to relatives for voluntary compliance; they refused. At last they placed a guard at the house preventing any communication with it. A few days later How died and as the illness did not spread the selectmen's actions seemed a success.[60] But, this was an isolated case. In November the epidemic occurred more widely and even the selectmen let it run its course. In April 1735 an embargo was laid on imported goods and the mercantile interest complained bitterly about their financial loss. The medical profession obliged again with the testimony " . . . That the . . . Distemper . . . proceed from some Affection of the Air, and not from any personal Infection receiv'd from the Sick, or Goods in their Neighbourhood" and the selectmen were prompt to inform "The Trading Part of the neighbouring Colonies."[61]

It is interesting to note that the Boston part of the epidemic might not have been diphtheria at all. Let us not forget that Sydenham thought that the "Pestilential Constitution" lets one infectious entity flow into another. In his later publishings Caulfield places the Boston epidemic of 1735 under the heading of "Scarlet fever" and there are good reasons for this.[62] Dr. William Douglass called it a "new" illness and described the typical picture of scarlet fever, including the strawberry tongue. The illness was milder in Boston than elsewhere (only 2.8% of the affected died as compared to sixty percent in New Hampshire). The Boston doctors felt that this was due to their greater skill, that Bostonians as a whole were superior specimens and that the air over their town was more wholesome than elsewhere.[63]

There are many other instances where Sydenham's theory prevented effective quarantine. According to the founder of Williams College, Colonel Williams, during the French and Indian War, fever and dysentery claimed as many victims among the Colonials as did the French bullets but "provincial surgeons seem to have been very little impressed with the importance of sanitary regulations and to have thought it their business not to prevent disease, but only to cure it."[64] It can be assumed that the British physicians enforced better sanitary rules. After all, in 1752 *Sir John Pringle* had published the first edition of his "Observations on the Diseases of the Army." He disagreed with Sydenham and believed that the effluvia from bedding, clothes and especially excrements of the sick were the main causes of infections. As a consequence he suggested frequent airing of the quarters, changing the bedding straw as often as possible, constructions of sanitary latrines, uncrowded hospitals and proper clothing, blankets and fuel.[65] During the Revolutionary War these methods were introduced into the Continental Army. *Dr. John Jones,* born at Jamaica, Long Island, New York in 1729, the first Professor of Surgery at Kings College Medical School (now Columbia), and with Professor Samuel Bard co-founder of New York Hospital, published in 1775 his "Plain Concise Practical Remarks, on the Treatments of Wounds and Fractures", the first American Surgical textbook. Beginning with its second edition it contains an appendix on military hospitals and sanitation.[66] He acknowledged that he is indebted to Sir John Pringle and adapted his ideas to American conditions. "To obviate the effect of intemperate heat, during the summer season, the clothing . . . ought to be lighter than what is worn generally by the British soldier." "The marches should always be so ordered, if possible, that the men may come to their ground before the heat of the day." No one should be allowed outside of his tent which should be covered with boughs to protect it from the sun. In winter, short flannel waistcoats should not be worn outside the shirts but inside as this gives more warmth. Moccasins with heavy soles are better than leather boots. Trenches should be constructed around tents to keep water out. Where straw beds can not easily be changed mattresses of corn husks should be used and frequently aired, washed and dried. Fires should be provided to dry wet clothes and campsite often changed. Soldiers should never be permitted to ease themselves except in latrines; this should be strictly enforced. The privies should always be constructed where the prevailing wind carries their odor away from the camps. During dysentery epidemics the ill should not be concentrated in a central hospital. This would cause overcrowding with its consequences. The lighter cases should be treated elsewhere. The hospitals themselves should be airy and fully supplied with blankets and medicines. There should be plenty of room, and if the ceilings were low some portions should be left open. Utmost cleanliness should be preserved.

All this proves that epidemics could be prevented and that the soldier was not a helpless victim of miasma and occult forces from the "bowels" of the earth.[67]

The Revolutionary War was an eyeopener. Its lessons would never be forgotten. *Benjamin Rush* (born 1745) who had introduced clinical instruction in the Medical School of the University of Pennsylvania and was a signer of the Declaration of Independence, contributed to this effort. In his "Result of Observations made in Military Hospitals" he made suggestions similar to those of Dr. John Jones.[68] Unfortunately, during the Yellow Fever Epidemics which began in Philadelphia in 1793 he fell back into the old pattern of Sydenham's epidemiology. In 1804 he wrote: " . . . I have relinquished the opinion published in my account of the yellow fever in the years 1793, 1794, and 1797, respecting its contagious nature."[69] And later on "For the change of my opinion upon this subject, I am indebted to Dr. Caldwell's and Mr. Webster's publications. . . ."[70]

This Mr. Webster is Noah Webster the famous lexicographer. The yellow fever epidemic in Philadelphia, at that time the commercial and intellectual capital of the United States as well as the seat of its government, caused panic everywhere. Business and civil government broke down and thousands who fled the city but were already infected before they left, died unattended by the roadside.[71] In New England, as well as in other regions, yellow fever was considered infectious (but not by most of the physicians) and strict quarantine was enforced. Governor John Hancock of Massachussetts ordered all vessels coming from Philadelphia stopped for examination. The Boston selectmen ordered the keeper of the hospital on Rainsford Island "to proceed with more caution than in small pox." Military guards were placed at all avenues leading into Boston and everyone coming from beyond the Connecticut River was examined. Travelers from Philadelphia were sent to Rainsford Island for 21 days; the others were washed with vinegar and fumigated with the help of explosions of gunpowder and then allowed to proceed provided they left their names and addresses with the authorities.[72]

New England and New York State escaped yellow fever in 1793, but in 1794 the disease struck New Haven and in 1795 it nearly obliterated New York City.[73] It reoccurred annually until about 1805 and also hit smaller ports like Portsmouth, Newburyport, Providence and New London.[74]

Noah Webster (born at West Hartford, Conn. in 1758), the author of "The American Spelling Book", the originator of the American copyright laws, incorporator of the Connecticut Academy of Arts and Sciences, participant in the Hartford Convention, and moving spirit in the establishment of Amherst College and standardizer of the American tongue through his great dictionary enjoyed a wide range of interests.[75] His major interest in natural science was epidemiology.[76]

In October 1795 he sent questionnaires to physicians in Philadelphia, New York, Baltimore, Norfolk and New Haven inquiring whether yellow fever was caused by infection or was "of domestic origin."[77] The results were published in 1796 in "A Collection of Papers on The subject of Bilious Fever, prevalent in the United States for a few years Past." The majority of the correspondents was convinced that yellow fever was *not* infectious. Of greatest interest is the reply of "Dr. Elihu H. Smith of New York."[78] I do not think to go astray when I identify this Dr. Elihu H. Smith with *Elihu Hubbard Smith* born at Litchfield, Connecticut, in 1771, the son of Dr. Reuben Smith who was one of the founders of the Litchfield County Medical Association of 1767. Elihu Hubbard Smith was a member of the Hartford Wits, the first American literary society, and edited the first anthology of American verse, published by Colliers in Litchfield in 1793. In 1794 he moved to New York. In that year his opera "Edwin and Angelina" was played on what was then Broadway. He was an Attending Physician of the New York Hospital and a leading abolitionist. In 1796 he founded with Samuel L. Mitchill and Edward Miller, "The New York Medical Repository," the first American medical journal.[79]

Dr. Elihu Hubbard Smith was an anti-contagionist. He wrote that "no direct, no clear evidence ever had been, or can be produced, in favor of the opinion that the fever was imported." Yellow fever was not a specific illness, only a "heightened" form of the usual summer fever.[80] Dr. Smith had to pay dearly for this conviction. By inviting Dr. I. B. Scandella, Italian physician who passed through New York to stay with him, he contracted yellow fever and died, age 28.[81]

Dr. Smith felt that the epidemic was localized in "the lowest, flattest and most sunken part of the whole city." But this he attributed to the weather. "Heavy rains had occured . . . even in Broadway . . . The stoppage of water was so great "that the stench was exceedingly offensive. . ."Clouds of musketoes (sic) incredibly large and distressing" were present.[82]

How near he came to the truth! And how tragical it is that his time did not know that the epidemic was transmitted by "musketoes." Elihu Hubbard Smith came even nearer to the facts when he wrote: "—That infection may be brought to any place . . . from abroad."[83] However, it had to meet certain circumstances in order to spread. By this he meant "breach of the principle of hygiene" and "local circumstances" by which he meant atmospheric conditions.

Dr. Eneas Munson of New Haven and his son *Dr. Elijah Munson* were the only ones who answered that they considered yellow fever infectious. They described that the first cases in New Haven occurred in the Gorham family living on Long Wharf within a few rods from the mooring of an infected sloop arriving from Martinique and that the infection spread from there through the city. "No person had the Yellow Fever, unless in consequence of attending the sick, or of being exposed by nurses, infected houses, clothing or furniture."[84] Dr. Leverett Hubbard,[85] most influential physician in New Haven and the first president of the Connecticut State Medical Association, died of the infection.[86] He disagreed violently with the Munsons.

No wonder that Noah Webster in his two-volume Epidemiology sided unqualifiedly with the non-contagionists and exerted tremendous influence as we have seen in the case of Benjamin Rush. He made statistical charts in which he correlated weather conditions and natural catastrophies (like eruptions of volcanoes) with the occurrences of epidemics. It appeared all very scientific.[87] To Dr. Currie, the Philadelphia physician who was for the infectious theory and the great local opponent of Benjamin Rush, Webster wrote 25 letters in which he proved his literary superiority though nothing else.[88] The leaders of the scientific community wrote him letters of appreciation. He became the great propagandist of the non-contagious theory and his Epidemiology was re-edited as late as the 1850's.

Benjamin Rush believed that the wholehearted acceptance of the non-contagious theory would have the following beneficial results:

1) It would free the seaports from four-fifths of the expenses for quarantine and "lazarettoes." "A very small apparatus . . . would be sufficient to prevent landing of persons affected . . . in our cities, and the more dangerous practice, of ships pouring

streams of pestilential air . . . upon the citizens . . . near our docks and wharves."

2) Merchants would be freed from losses incurred by the delays of quarantine.

3) Citizens kept on board ships in quarantine would not have to remain in the pestilential air near waters and marshes and would not needlessly be kept away from their families, business and friends.

4) Excretions of the ill would be removed speedily and their room would be ventilated, "and therby prevent the accumulation, and further putrefaction of those exhalations which may reproduce it."

5) The sick would not be deserted by their friends and relatives out of dread of infection. They would be better taken care of and their anxiety and fear would be decreased, all contributing to a faster recovery.

6) The poor who were affected would not be removed from their houses. They would not be taken "half dead with disease and terror" to a crowded hospital, or horrified by having a yellow flag nailed to their door.

7) "By deriving the fever from our own climate and atmosphere, we shall be able to foresee its approach in the increased violence of common diseases, in the morbid state of vegetation, in the course of the winds, in the diseases of certain brute animals, and in the increase of common, or the appearance of uncommon insects."

8) The belief in the non-contagious origin of yellow fever would lead us to drain or cover marshy grounds, to remove from the cities "all the sources of impure air". In short it would promote cleanliness.[89]

From the last points it must be recognized that the non-contagious theory contained elements of beneficial developments as the promotion of sanitary conditions, of clean cities, an idea rather new at that time. This is of the greatest importance. The non-contagionist theory maintains that noxious miasma of the air was caused by decaying and putrid animal and vegetable matter. This led towards strict sanitary regulations. The Massachussetts General Court, on February 13, 1799, established a Board of Health which set up firm rules for dealers in fish and salted meat, for dumping of refuse on streets, docks or Mill Pond, for storage of untanned hides, and many other nuisances. The board ruled that it was unlawful to have the contents of a "vault" within eighteen inches of the surface of the ground and ordered that every new "vault" had to be inspected and certified before it could be completed. Graves had to be six feet deep and once every fortnight crushed limestone had to be scattered underneath all churches where bodies were buried.[91]

The protagonists of contagion did not offer opposition. Not being able to prove their contention experimentally, they acted on the supposition that either theory might be right and that it was best to play safe in both directions.[92]

Thus, the theory we consider incorrect today, promoted the blessing of sanitation and clean cities.

C. The Panacea of Depletion.

In 1811 Dr. Elisha North of Goshen, Conn., wrote in his book on the brand new cerebrospinal meningitis (then called spotted fever), an illness which had first appeared in Geneva, Switzerland, in 1805: "It is probable we are indebted to the effects of tradition for the recovery or revival of the use of external heat in fever. Mrs. Hurlburt,* from whom the practice of sweating by means of external heat in the spotted fever originated, may be regarded as having learned this practice traditionally from the physicians who lived previous to the days of Sydenham. Thus we see, while the medical faculty succeeded in banishing from among their list of remedies the practice of sweating by means of external heat, that among the women, the currents run the other way."[93]

Dr. Elisha North's book received some unkind criticism but it is a milestone in the fight against blood letting.[94]

Dr. North is not correct in blaming Thomas Sydenham for the widespread use of bleeding. The practice is of greater antiquity.[95]

Thomas Sydenham was no rabid bloodletter. He opened the vein in almost every illness but never drew more than ten ounces and did not repeat the practice when it failed to help the first time.[96] This should be compared with his French contemporary Guy Patin who once bled a colleague thirty-two successive times and himself seven times for a simple head cold.[97] Sydenham's distinctive influence on the practice is based largely on his theories which followers and adulators developed into most bizarre practices. In his treatise on smallpox he states that " . . . we must take notice of two different Seasons in the disease, the one of separation, the other of expulsion. The first for the most parts passed through with a febrile Ebullition, and is wont to be finished in the first three or four days, in which time Nature is busied in gathering together the inflamed Particles which molest the Blood, and is thrusting them out to the fleshy parts.

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*Mrs. Hurlburt from Winchester, Conn. did not permit the doctors to come near her daughter when she came down with spotted fever. She did everything contrary to the physicians' advice and "forced fluids" through giving hemlock tea. Her daughter was the first victim to survive. North accepted Mrs. Hurlburt's hemlock tea but when some patients could not take this, he finally forced "spirits" (alcohol) as this was regarded a stimulant on the "sensitive soul" by the Vitalists and was used as the modern analepits are today.

"The Blood, by this means is now quieted, and separation being thus finished by the help of ebullition of the Blood, expulsion now takes place, which is performed all the rest of the time of the Disease, by means of little abscesses of the Flesh . . ."[98] Sydenham was inclined to leave this process to nature and help it along. Too much "ebullition" he would treat by cooling measures, too little by stimulation through heat or "cordials." To him bloodletting was one of the cooling measures but not the only one. At the end of the cure he would bleed to restore the "original healthiness" of the blood.[99]

Unfortunately this theory contained the seed of exaggeration. Too much "ebullition" was more and more treated by making the blood flow copiously. Boerhaave's theory of the plethora offered an additional excuse and Stahl's theory about the phlogiston which was added to matter, including blood, during the process of heating left no doubt that the practice was right.[100] Haller tried to prove its rationale by experiments. He did not succeed. In Europe in 1825, the abuse of the practice was finally stopped as a consequence of evaluation of medical statistics by Pierre-Charles-Alexandre Louis (1787-1872).[102]

The story of bloodletting in America is interesting by itself. Benjamin Rush a "Physician-in-Chief" of one of the Army Departments during the Revolutionary War, was a student of William Cullen of Edinburgh, Scotland, who stands out as a moderate bleeder.[103] The Philadelphian, however, developed his own ideas.[103] His "Medical Inquiries and Observations" contains an eighty-six page essay entitled: Defence of Blood-Letting".[104] The heading indicates that many American physicians were judicious and doubtful about the practice. According to Rush, fevers "depend upon morbid and excessive action in the blood-vessels. It is connected . . . with preternatural sensibility in their muscle fibres. The blood is the most powerful irritant which acts upon them. By abstracting a part of it, we lessen the principal cause of the fever. The effect of bloodletting is as immediate and natural . . . , as the abstraction of sand is, to cure an inflammation of the eye, when it arises from that cause."[105] He bled in states of "great weakness" because "In this state of the system there is the same morbid and preternatural action in the blood-vessels, that there is in persons of robust habits . . ."[106] He bled his oldest daughter when she was six weeks old for convulsions brought on by an excessive dose of laudanum. . . ."I bled one of my sons twice, before he was two months old, for an acute fever which fell upon his lungs and bowels." He mentions that Sydenham bled children in the "hooping cough" and "in dentition."[107] He bled a patient 84 years old[108] and believed the practice indicated in menstruation and also in pregnancy because pregnancy is an "inflammation and distension induced upon the uterus directly, and indirectly upon the whole system . . ."[109] Fainting and coldness of extremites were no contraindications,[110] neither was "dissolved" blood.[111]

In "Palsy" bleeding was indicated because "it is the effect . . . induced by the violent force of impression upon the blood-vessels".[112]

He assumed that in a person of ordinary size twenty-five to twenty-eight pounds consist of blood. How much to take was based on the following theory: "One of the uses of the blood is to stimulate the blood-vessels, and thereby to assist in originating and preserving animal life. In a healthy state of vessels, the whole mass of blood is necessary for this purpose; but in their state of morbid excitability, a much less quantity of blood than what is natural (perhaps in some cases four or five pounds) are sufficient to keep up an equal and vigorous circulation."[113] "Mr. Cline drew 320 ounces of blood in 20 days from a patient . . ." "A gentleman at Angola lost between three and four pounds daily from his nose. To cure it, he was bled 97 times in one year. A young woman was bled 1,020 times to cure her of . . . hysteria." "Dr. Physick drew ninety ounces, by weight, from Dr. Dewees . . . at one bleeding, and thereby restored him so speedily to health, that he was able to attend to his business in three days . . . "[114]

This latter remark should make it clear that this practice was not that of an isolated madman. Philip Syng Physick (1768-1833) was the "father of American surgery," introducer of the stomach tube and absorbable ligatures,[115] and often Benjamin Rush's consultant. He and Dr. Griffitts "had renounced the prejudices of the schools in which they had been educated, and had conformed their principles and practice to the present improving state of medical science."[116]

Even Dr. Eneas Munson of New Haven, Connecticut, who had pronounced the advanced idea that yellow fever was infectious, wrote: " . . . The extraordinary mortality having convinced us of the impropriety of trusting to, or using Cordials, Bark, Etc., we with one accord had record to the lancet; * . . ."

Rush wrote that "philosophers . . . say that Man is formed 'inter stercus and uninam' ". The "devines" say that he is "conceived in sin, and shapen in iniquity." "I believe it to be equally true and alike humiliating, that he is conceived and brought forth in disease."[118] There is, in his thinking, hardly any place for the restoring powers of nature. The physician was the saviour of defiled mankind beginning with pregnancy and,

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* The lancet is the instrument used to open a vein. To this day the leading British medical journal is called the "Lancet".

depleting procedures, especially blood-letting, were his panacea.

The practice did not die easily. In 1840 Robert Mayer (born at Heilbronn, Germany in 1814) voyaged to Java as a ship's surgeon. He practiced venesection extensively and was struck by the fact that the blood he was drawing in the tropics was lighter than that obtained in Europe. His genius decided that this change was caused by the thermal economy of the body. His attention was directed towards the relation between heat and oxidyzed material which led to the conclusion that not only matter but also energy was indestructible and published his findings and ideas in 1842. It became the First Law of Thermodynamics which is better known as the Law of the Conservation of Energy.[119]

D. Conclusions.

The physicians of the seventeenth and eighteenth centuries were the channel through which Western knowledge expanded to the New World to form a basis on which American science could develop to its preeminence at the present time. It has been shown that even in the nineteenth century "almost half of the American scientists who made significant research contributions . . . were physicians."[120] These contributions were not limited to medicine. We can assume that the percentage of physicians among creative scientists was even higher during the Colonial period.[121]

At the height of the Puritan oligarchy New England medical thought had to be part of the religious preoccupation. It had to be subservient and its theories had to be explained within the totalitarian philosophy of the Faith. It gave to the profession an ethical attitude it has never lost; it did not promote it scientifically. The all-comprising and elegant ideas of Stahlean vitalism served as a readily acceptable bridge which led science from being part of a general idea of life to the self-imposed limitation of the modern discipline which considers the provable only.

In consequence, many questions which occupied the mind of the Colonial physician are overlooked today. However, their questions live on. They become more pertinent every day.

Religion's, the alchemist's, Paracelsus', Van Helmont's, the Puritan divine's, Stahl's question. "What is the difference between a living and a dead body?" cries for a new answer. Science proved all the old ideas wrong; it has not offered a new solution. At a time in which stoppage of the heart beat and cessation of breathing does not mean death, since the patient may be revived, new definitions of life have to be found. The electroencephalogram does not seem to be of help, as even after stoppage of electrical activity of the brain, patients have been resuscitated.[122] Medical practice, the social order, the conscience of mankind and the humanist's conviction demand a new answer to the question of life and death. It is not important that this answer be scientifically provable; it is important that it cannot be disproved. The only possible answer might very well be part of the discipline of Ethics.

The conquest of epidemics through the general acceptance of contagion has eliminated the preoccupation with questions of seasonal and atmospheric causes. It is time to review this attitude. Atmospheric changes play a role as every sufferer from arthritic or muscular and respiratory illnesses can attest. Therapeutic success of one point of view should not make us forget the truth which may be hidden within less satisfactory ideas.

The decline of religious conviction has become a serious medical problem. The modern martyr Dietrich Bonhoeffer (killed April 9, 1945) has repeatedly stated that the Supreme Being can no longer be regarded as need-fulfiller as far as wordly things are concerned. Science and its consequences fill this place today.[123] Science, especially Medicine, must accept this burden willingly.

The searchlight of scientific penetration has eroded the tenets of religion and philosophy. Today's Man exists in a void of uncertainty, doubt and cynicism. No longer are human beings at home in their universe; it does not assign purposes and goals. Increasing and accumulated knowledge has to offer direction beyond the immediate present. Science is at the base of the whole development. It has to take leadership towards its solution.

Only ideas can make life significant again, ideas which are the outcome of facts. Scientists and others must be willing to create a world picture which might not be provable in all its details but does not contradict the accepted facts. The world-concept of the future must be based on imagination and expanding knowledge; mankind can not live without it. We should strive for the best but should not be afraid of occasional mistakes. Even these may promote science and progress as seen by the examples of sanitation based on a mistaken epidemiology and bloodletting leading to the Law of Conservation of Energy.

Man must accept that he is doomed probably never to know the absolute truth. He should be prepared to vary his prevailing world picture as new scientific findings emerge. This is his glory and his fate.

Questions asked in the past never disappear. They can be answered, guided into new directions, delayed, wrongly solved or forgotten. When they are wrongly solved they will be rectified eventually; when forgotten they will emerge again. Questions arise from human needs and human propensity. This is the essence of history.

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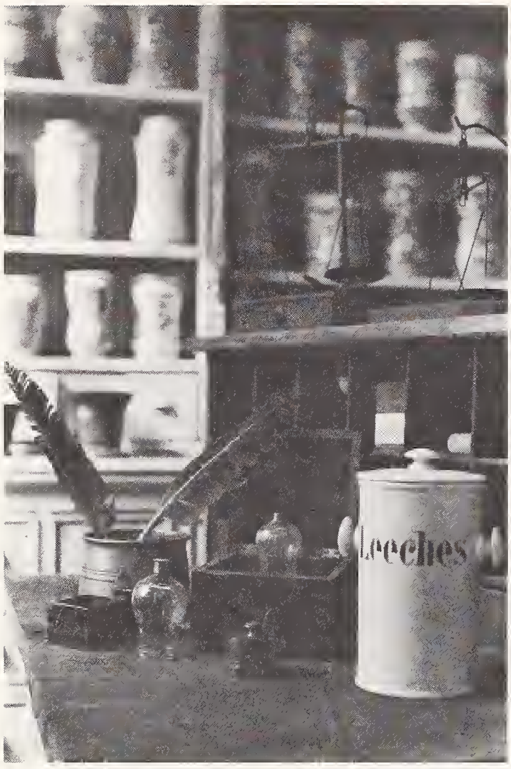
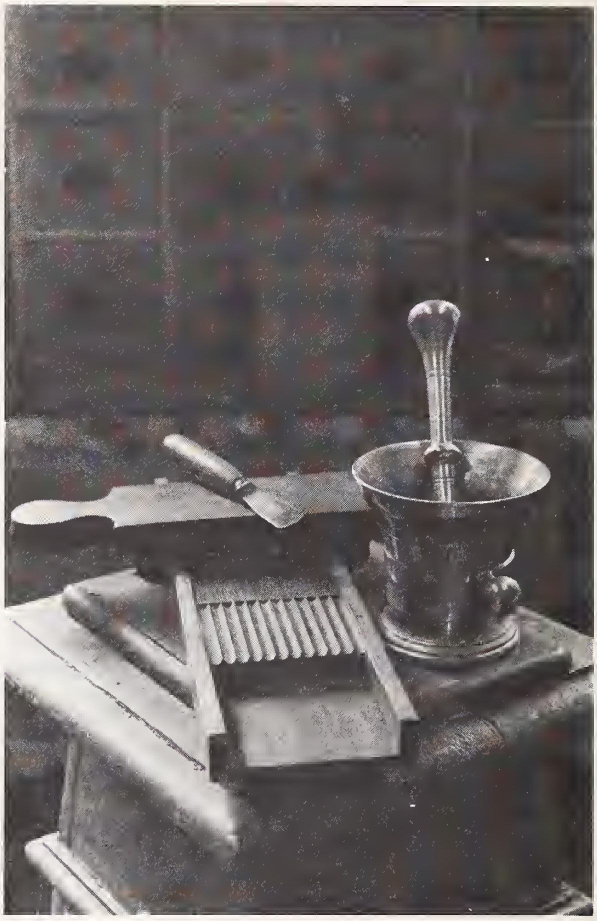
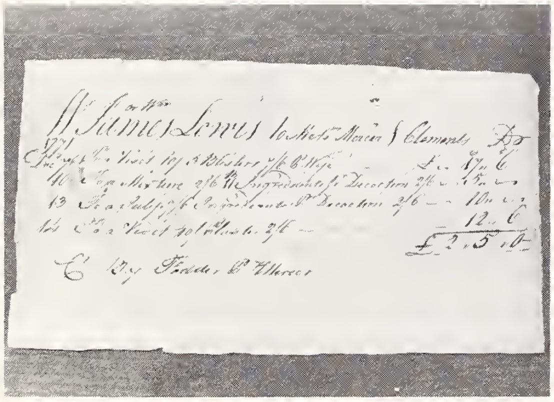
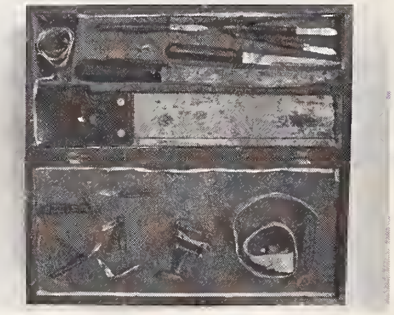
"Oh Lord! We thank Thee for the Oxygen gas. We thank Thee for the Hydrogen gas, and for all the gases. We thank Thee for the Cerebrum; we thank Thee for the Cerebellum, and for the Medulla oblongata."

President Wheelock of Dartmouth, inspired by a lecture by Nathan Smith, Professor at the Dartmouth Medical School, 1798-1813. Smith was the entire faculty of the school until he came to Yale in 1813 as Professor of Medicine. He lectured in Anatomy, Surgery, Chemistry and the Theory and Practice of Physic. Oliver Wendell Holmes remarked that he filled, not a chair, but "a whole settee of professorships."









These photographs have been provided through the courtesy of Dr. George Rosen of Yale University. They depict some of the equipment of the colonial physician, as well as a typical shingle and even a bill for professional services. All photographs were taken by Mr. William B. Carter.

The Colonial American Medical Student: 1750-1776

James Tait Goodrich

Introduction

Of all the sciences, few have changed as dramatically as medical science in regard to education. In this country the concept of a formalized medical education (i.e., university-trained M.D.'s) did not occur until late into our Colonial period. It seems indeed fitting on this, our 200th year, to look back and see what constituted a medical education in Colonial America. This is not an easy task per se because of the many mirage techniques one could perform and be called an M.D. In order to appreciate more deeply medical education in this period one has to look at a student's curriculum, the theory and practice he was taught, diseases and treatments, and clinical instruction. Also a look at two other approaches to medical care must be analyzed: To this end the apprenticeship system will be briefly reviewed and a short look at quackery will be taken. Of these last two the apprenticeship system produced most of our medical practitioners while quackery provided us with a great deal of misery and developed the impetus for our forefathers to develop a formalized system of medical education.

The Development of American Medical Education

In 1765 and 1767, with the founding of our first two medical schools (University of Pennsylvania and King's College, now called Columbia University), the aspiring young physician had three routes available to him to practice the medical arts. A student could enter an apprenticeship program, by far the most common route to a medical training. Or, the medical student could travel to Europe and enter a European medical school such as Edinburgh, Leyden, or Paris. The third option, though certainly a questionable one, would be to don his buffoonery accouterments, mount his podium and then with blaring trumpets announce to the world his marvelous cures with his superpatented medicines. Each of these three approaches will be discussed, but the major emphasis will be placed on the university education.

While our first two medical schools opened in 1765 and 1767 this is not to say medical schools did not exist in the Americas earlier. Medical education on this continent was actually born in 1538 when at Santo Tomas University, Santo Domingo, the first medical school was formed. This was 227 years before the University of Pennsylvania (1765). At this time, by Spanish decree, a medical student was required to attend four years of medical school with a two-year apprenticeship under a physician.[1] The early teachers were Francisican, Jesuit and Dominican friars; thus was to begin a period of heavy interaction between the clergy and the medical profession. Here in the United States our first attempt at a university occurred in 1619, when the colony of Virginia, at the ripe age of twelve, along with the introduction of slavery attempted to set up a university. An Indian massacre in 1622 ended the lives of the president and seventeen of his workmen and also ended our first university.[2]

Medical education in the Colonies survived by adopting a system quite popular in Europe. This involved a young man, usually about the age of sixteen apprenticing himself to a more senior and "better-trained" physician. In 1775, of an estimated 3500 practicing physicians in the Colonies, not more than 400 had attended any medical school, either here or abroad[3]. From these figures one can appreciate the importance of the apprentice system for medical training. While this style of education may have provided us with our greatest number of physicians it also supplied us with our greatest number of problems. To understand why this was the case, one only has to look at the system itself. The training called for a student to assign himself to a preceptor for a period of three to seven years and then pay a fee according to the preceptor's status. It was the preceptor's obligation to provide training, books, and the services necessary to make this student eligible for a certificate* of training.[4,5,6] The student in turn was expected to learn the basic sciences by reading and asking questions During this period he was also expected to do all the menial chores like saddling and grooming the horses, cleaning medicine bottles, and collecting the bills too. In many cases these students acted as nothing more than hired hands providing cheap labor. In actual fact they paid[8]! The medical student could also have one additional problem, as noted by Rothstein[9], that is, he could be quite lazy and avoid his learning responsibilities. In reality the apprentice rarely ever learned the essential sciences like anatomy, chemistry, and materia medica. Instead he rode with the doctor

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The author would like to extend his grateful thanks to Dr. Samuel L. Saltzman (Formerly Assistant Professor of Ophthalmology, New York Medical College), this for his most generous consultation and also use of his elegant library. To Karen L. Hall of the Columbia University Health Sciences Library, a sincere thanks for help and advice in preparation of this manuscript.

*For a copy of one of these certificates given upon completion of an apprentice's training, see Miller's article.[7]

holding the basin for bleeding, changing dirty dressings, delivering messages and performing other miscellaneous tasks.[10,11]

This ineffectual training was also confounded by a physician teaching dogma, the basis of which he never understood, or at least whose theory was lost in the many retellings. Combine this with the use of "remedies they had stumbled on and seen work with their own eyes, usually the last ineffectual thing they had tried before the patient got well[12]". It is now easy to understand with this brief introduction why the treatment was so bad that it led a physician in Boston to note: "Their practice was very uniform—bleeding, vomiting, blistering, purging, etc . . . If the illness continued there was *repetendi* and finally *murderandi*. Nature was never to be consulted or allowed to have any concern in the affair[13]". Out of this chameleon style of education came a "fully qualified" practicing physician complete with certificate from his mentor attesting to his competency. When one realizes the almost total deficiency of medical licensing—what little that existed was ineffectual[14-18] –and the inability of the population to mount a successful attack against this malpractice (mostly through pure ignorance), one can appreciate the ineffectiveness of this system and the reasons why the more prominent physicians went to Europe to be educated. Our first medical schools were developed out of a frustration with this system.[5]

Medical education in this country never really became effective, except in isolated cases involving the better universities, until after the Flexner Report of 1910. Even with the noble attempts of our early physicians as we shall see, the Revolutionary War destroyed most of their efforts. Medical education made a reasonable recovery after the War, but its quality deteriorated in the early 1800's with the rise of proprietary medical schools. These proprietary schools dropped admission requirements and had only prestidigitatorial requirements for degrees. All of this provided for "diploma mills" generating students by the thousands with their degrees of medicine. Medical schools seemed to develop wherever the "shifting transportation routes" led[19].

A comment by Mumford in 1903 sums up the situation quite well: "No better schools than our best schools are to be found in the world, no where in the world are to be found schools as bad as our worst[20]". It took the Flexner Report and much soul searching to reverse all this.[21-24]

The other form of medical practice, questionable at the least, in this period and which will only be briefly reviewed, concerns quackery. Quacks have always held an interesting position in the history of medicine. If nothing else, it makes good anecdotal reading; this period was no exception. These "mere pretenders to the profession[25]" caused by far the greatest insult to the legitimate practitioners of the medical profession. No better description of their style has been given than that by Puschmann who noted:

> "In a showy cortége tricked out in all manner of particoloured finery and attended by a harlequin . . . these gentry roamed about to the annual fairs and church festivals and detailed to the public the remarkable cures which they professed to have performed. With shameless effrontery they extolled the healing virtues of their medicines against consumption, deafness, and all the incurable diseases imaginable. Many declared that they had the power of at once restoring sight, even if it had been lost for many years; others recommended pills to cure barreness, which according to their account produced the desired effect even without coition . . . However, the wandering operators wrought the greatest mischief. When in the public squares they exhibited proofs of their skills to the astonished multitudes amid the blasts of trumpets and the beat of drums, which were intended to drown out the cries of the unfortunate patients, none thought of the sad consequences entailed too often by these surgical manipulators."[26]

These "ignorant priests, magicians and astrolgers"[27] also added to the fear and shame of the medical profession. These situations of poorly trained apprentices combined with quacks led to minimifidianistic conditions where medical providers of this period were not always held in high esteem. It was said by Miller[28] that many Americans lived as much in fear of the physician as of the disease. Thomas Jefferson was said to have made the comment that when he saw three or more doctors gathered together he looked to the sky to see if buzzards were waiting for the kill.

To avoid painting a totally dismal picture of medical care it should be noted that some pockets of excellence did exist. Some of our earliest colonial physicians combined the caduceus with the collar. These clergy-physicians tended to be the most highly respected and when one considers their more humanitarian attitudes it is easy to see how their respectability developed. Some of the more famous were Dr. Cotton Mather, who introduced smallpox inoculation in 1721; Dr. Samuel Fuller who landed with the first immigrants at Plymouth in 1620; Dr. Thomas Thacher, who published the first medical pamphlet in 1677 *(Guide to Smallpox and Measles)*, Drs. Giles Firmin and John Fisk.[29] The major problem for health care in the Colonies was that these physician-types were few and far between.

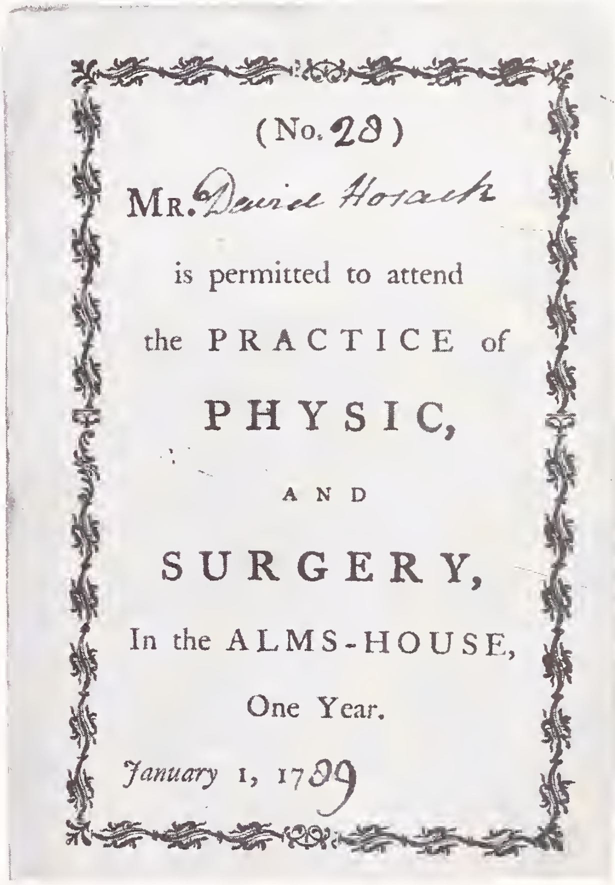
Many historians credit the "Six-Year War" (1756-63) with providing a turning point in medical education here. Dr. Nicholas Romayne in an 1811 address to the New York State Medical Society put it most succinctly. In this address he alludes to the effect of the wars between France and England over the Colonies giving many men their first taste of medicine and was " . . . perhaps, the first circumstance which materially improved the condition of medicine in this state (New York) . . . [these Europeans brought along competent medical staff] affording to many young Americans opportunities of attending the military hospitals, and receiving such professional instruction as gave them afterward consideration with the public[30]". This opportunity for "numerous American physicians, for the most part apprentice trained, to serve as regimental surgeons and assistants . . . attached to the service of British educated military surgeons[31]" provided much in the way of sophisticated (by American standards) medical training. This experience is felt to have provided the impetus for some of our people to consider a university education in this country.

European Universities and Their Training

In order to understand how our formal i.e., university-trained, medical education system developed we must first look at the European system for the germane reason it trained and provided the paradigm for our own university medical faculty. A typical pattern for a student in the 1750's and 1760's would be to begin an apprenticeship under a local physician of some eminence. After a period of two to three years such a student would leave for Europe to study at one of the major institutions such as Edinburgh (the most common), Leyden, or Padua. Either before or after their university training they went to one of the major cities like London, Paris or Vienna and became associated with one of the hospitals to learn surgery and hospital medical training. Some would travel even more extensively, as will be seen, to take individual instruction under great teachers like Morgagni, the Hunter brothers, Smellie, and Van Swieten.

> " . . . so constant was the flow of American medical students to England, Scotland, and the Continent in the latter half of the eighteenth century, that one might speak of a kind of trade in them, America exporting the raw materials for physicians and surgeons and receiving after a passage of three or four years the finished product. These colonials and young republicans filled themselves at the fountainhead of science abroad; and returning with the knowledge of the European schools and hospitals were prepared and eager to spread their learning . . .[32]".

The question might be asked, what made these students go abroad? What desires led them to spend years in a foreign territory learning a subject in a foreign language, to sacrifice time and energy for something that could more easily be obtained here in the Colonies? To get a more intimate view the following comment by one of our early physicians, David Hosack, gives us at least a feeling. Hosack, receiving his initial education in New York and Philadelphia became "convinced that the distinction which our citizens at that time made between those physicians who had been educated at home and those who had had additional instruction at the universities of Europe made study abroad necessary if one would succeed, thus my ambition to excel in my profession did not suffer me to remain insensible under such distinction . . . I accordingly suggested to my father the propriety of making a visit to Europe and of attending the medical schools of Edinburgh and London[33]".



(No. 28)

MR. David Hosack

is permitted to attend

the PRACTICE of

PHYSIC,

AND

SURGERY,

In the ALMS-HOUSE,

One Year.

January 1, 1789

The European advantage is easily seen when one could not only study under William Cullen, the Monros of Edinburgh, the Hunters of London, Linnaeus at Uppsala; combine this with the ability to walk the wards of St. Thomas, Guy's, Edinburgh's Royal Infirmary, the hospitals of Paris; all of the experience with the "desire to excel" led Americans to leave home and study in the European universities. It was the skills and the style of education at these institutions that so influenced our own American universities. Before looking at our schools a survey of the European curriculum, with its teachers and instructional systems will be reviewed. Without an understanding of these educational systems one cannot understand the development of our own medical universities.

A Survey of Curriculum at European Universities

To develop an understanding of the European medical educational system we will look at two different schools, the Universities of Würzburg and of Edinburgh. The scheme of studies for the year 1749 at the University of Wurzburg included chores divided up among a faculty of five. The first member taught a course on "Institude of Medicine" (what we would call Physiology today); he would also discuss the causes and effects of health and disease in relation to anatomy and pathology. A second member would present the botanical lectures and be responsible for the botanical garden. With the third member rested the responsibility to give lectures on chemistry complete with the skills of compounding medicines. The fourth gave lectures on pathology and therapeutics as they related to internal disease; this professor was also responsible for providing bedside clinical instruction and immediate care of the sick. The last member taught anatomy and surgery, aided by a prosector; it was also his position to act as surgeon and teach midwifery.[34]

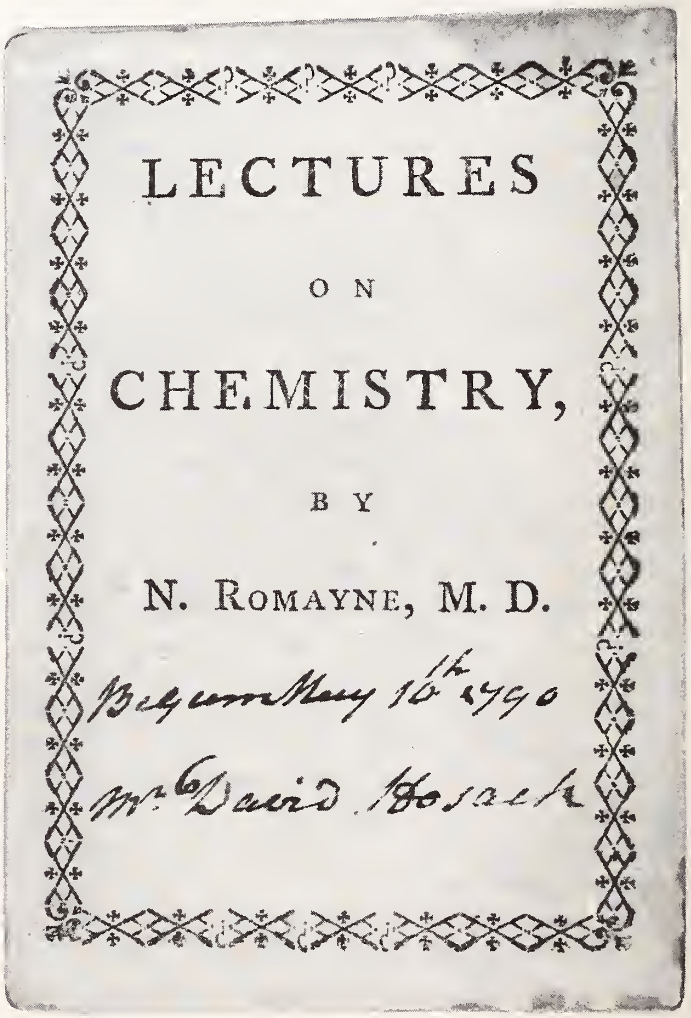
In 1719, an era of great medicine began at the University of Edinburgh. Under the splendid talents and industry of Dr. Monro primus, the celebrated medical staff of Edinburgh was formed. At Edinburgh and under such distinguished men as Drs. Cullen, Monro, Black, Gregory and Hope the students took courses in Anatomy, Natural Philosophy, Practice of Infirmary and Physick. A "typical day" of a medical student would be the following ten hour day recorded by David Hosack[35]:

8 a.m: [Andrew Duncan] Institutes of Physic
9-10: [John Gregory] Practice of Physic
10-11: [John] Black Chemistry
11-12: Home Materia Medica
12-1 p.m.: Infirmary
1-3: Monro Anatomy
3-4: [Alexander and James] Hamilton Midwifery
6-7: Clinical Lectures
7-8: Fyfe's Demonstrations
Attendance at Royal Infirmary and Heirot's Hospital.

An exclusive medical society to which admission could only be attained by unanimous vote of the members attracted the better students at Edinburgh. This society provided the opportunity for students to present papers and discuss topics of medicine. Each member was obligated to present three papers "on a case in practical medicine, on a medical question and on one of the Hippocratic aphorisms. One of [John] Morgan's fellow students, for example, had to describe a case of diabetes with its causes, diagnosis, symptoms, prognosis, and methods of cure; answer the question of what was the most approved cure for hemorrhoids, and comment on Hippocrates' aphorism, that 'an erysipelas in the womb of a child-bearing woman is fatal'[36]".

At the end of his medical curriculum at Edinburgh a student was required to write a thesis and defended it at a public defense. For example, John Morgan wrote his thesis on the "Formation of Pus" which was published in Latin and defended. He also had to "write and defend commentaries on two Hippocratic aphorisms [and] comment in writing on two practical cases[37]". Defense was required of both.

A student at Edinburgh after his year(s) of study would then spend a year "walking the hospitals" usually London or on the Continent — this to refine his clinical skills and acquire the culture of society — all this being necessary to become an erudite and distinguished member of the medical community. A more detailed study of these hospital tours will be discussed in a later section.



LECTURES

ON

CHEMISTRY,

BY

N. ROMAYNE, M. D.

Begun May 16th 1790

Mr. David Hosack

Major Teachers and Systems of Thought

After having looked at a typical curriculum an explanation of the medical theory is in order. This is necessary to understand more completely the experience, exposure and erudition the medical student needed and received in this period of our medical history. The type of medicine prior to the eighteenth century relied heavily on Galenic theory and the aphorisms of Hippocrates. An analysis of this earlier period shows a physician whose "... discourse savored of the weighty doctrines of Hippocrates diluted by the subtle speculations of Galen, reinforced by the curious comments of the Arabian schoolmen as they conveyed in the mellifluous language of Fernelius, blended, it may be, with something of the lofty mysticism of Van Helmont[38]". Out of this earlier style of these ancient champions of learning developed a much more pragmatic thinker of medical ideas. The eighteenth century physician was accurately described by Garrison as a "theorist and a system-maker". These people were over-eager and indeed went to great lengths to classify diseases by systems following closely the concept of Linnaeus and his classification of plants. Some of these classifications included Sauvages *(Nosologia methodica,* 1760); von Linne (*Genera morborum,* 1763); Cullen (*Synopsis nosologiae,* 1769). These systems of nosology allowed a physician — realize this occurred in theory only — to pick out a few outstanding characteristics of a disease and by following a chart and diagram to classify and name a disease. Not so different from charts used today in microbiology laboratories to classify bacteria by means of a series of exotic plates and cultures. This ability, combined with a desire to trace and classify diseases, in contradiction to the *ex cathedra* teachings of earlier eras, led to a century of transition. This was a period of medical science when we see developing a more empirical attitude and elimination of the early philosophical ideas. As the examination of the following theorists will show, this is really the period of awakened and enlightened thought. While some of their beliefs may seem antediluvian to us now, one must remember that for their period they were unique for their forethought and remarkable overturning of preexisting and normally unchallenged dogma.

The one individual who could be considered the leader of the "systemists" and one who probably contributed the most to medicine in this period was Herman Boerhaave. Boerhaave, who succeeded Drelincourt upon his death in 1701, to the chair of medicine at Leyden held ". . . an undisputed sovereignty in the medical world for upwards of half an century[39]". In his inaugural dissertation upon assuming this chair he recommended the study of the works of Hippocrates, these because he admired Hippocrates' correctness of description, his patience when attending the indications of nature, his understanding of the peculiarities of the constitution to which he often ascribed the cure, all this without or at least with little interference on his [Hippocrates'] part. Boerhaave has often been compared to Galen and it could be "asserted that he will not lose by the comparison. If Galen possessed more genius, Boerhaave possessed more judgment; while in their acquirements, and in the extent of their information, it would not be easy to decide between them[40]". Boerhaave's greatness lay not in great discoveries but in his ability as a systemist. His skill as a teacher in a pre-eminent university led to an influence which developed a physician who did not "adapt himself to preconceived systems and ancient concepts, but [instead] one who seeks to arrange the problems of nature in logical sequence, considering man as part of the Cosmos[41]". Boerhaave was also an organizer of the modern plan of clinical instruction. With his hospital of twelve beds at Leyden, he developed one of the major clinical teaching centers of Europe. Upon these twelve beds Sigerist has stated half the physicians of Europe were trained. Thus he took the Hellenic teachings as his ground-work, and by using a systematic approach to the patient, an approach that used the scientific acquisitions of his period. By doing this he allowed a major system to develop into one whose influence lasted well into the end of the eighteenth century.

Another important influence in this period was a student of Boerhaave, Gerard Van Swieten. In 1745 religious problems forced him to leave Leyden from where he went to Vienna at the invitation of the Empress Maria Theresa. Under his influence Austria developed a eminent school of medicine and successfully organized the first Viennese school of clinical instruction. Under his tutelage departments of anatomy, surgery, clinical instructions, and a botanical garden were established. He also successfully introduced the Fahrenheit thermometer into clinical practice. One of his chief contributions to education was a thirty-year endeavor on a eighteen volume set called *Commentaries on Boerhaave's aphorisms concerning the knowledge and care of disease,* 1776. This set proved to be the main reference source for many a generation of medical students both here and abroad.

No American medical student of the Colonial period could escape the influence of one of the significant Edinburgh thinkers, William Cullen. He also was a "systemist" who believed in tabulating and classifying diseases. Cullen is said to have rivaled Syndenham for his descriptions and classifications of diseases, yet he was not known for any original contributions. His theory of the disease process was one which put or placed disease within the body's solid structure. He proceeded in his book *Synopsis nosologiae,* 1769 to divide disease into four classes: *pyrexial* or fevers, *neuroses* or nervous diseases, *cachexiae* or depraved conditions, and finally *locales* or local complaints. He also published a book called *First Lines of the Practice of Physick,* 1776, a book so popular it was translated into French and German. Cullen was also immensely popular in the classroom, the reason probably being that he was one of the first to deliver his lectures in English in contradistinction to the old Latin which was traditional in this period.

Another "systemist" and probably one of the greatest physiologists of all time was Albrecht von Haller. This genius learned to write at the age of five, knew Greek and Hebrew, with the grammar of Chaldaic by age nine, and wrote a satire in Latin by ten. By the time von Haller died Garrison[42] noted he had produced over 13,000 publications. He also was a student of Boerhaave and studied under Albinus and Ruysch, learned surgery with Le Dran in Paris and for breadth studied mathematics under Bernouilli in Basle. His bibliothecae and treatises provided an immense knowledge for this period[43]. He was a brilliant experimentalist besides being a prolific writer. His works include many original discoveries, some of which were forgotten only to be rediscovered later. Two noteworthy examples were his proposal of the myogenic basis of the heart beat and the role of bile in the digestion of fat. He was a proponent of William Harvey's theory on "Epigenesis". This theory proposes that the "Forming of new organisms takes place by successive differentiation of a relatively homogeneous rudiment into the various parts and structures[44]". The opposing view to this theory was developed by Malpighi who held a view called "metamorphosis". This view advocated that a "new being exists as an entirety in the ovum antecedently to the process of growing, and that all that occurred during gestation or incubation is the simple expansion or unfolding of organs that already exist[45]". Another of Haller's major contributions was his "doctrine of irritability". To explain involuntary muscle and nervous activity he introduced his doctrine of irritability to replace the old Galenic concept of an "animal spirit". Haller proved by experimentation that "irritability is a specific property of all muscular tissues and that sensibility is the exclusive property of nervous tissue[46]".

Another major influence on clinical medicine of this period was a professor at Padua, Giovanni Morgagni (1682-1776). This "Father of Pathological Anatomy" did much to receive and revise the art and science of the pathological mechanisms. In Morgagni " . . . we see an anatomist and pathologist combining his special knowledge of the autopsy room with the bedside observations of the clinician. He brought medicine to its true foundationhead—the pathology that Hippocrates had foreseen without penetrating into its mysteries[47]".

It was at the ripe age of 79 that he published his monumental work which consisted of 70 letters covering over 700 cases and necropsies. Using his ability to correlate the clinical record with his autopsy findings he published a series of descriptions of disease. Just to give a brief insight to this man's contribution the following is an abbreviated list of some of his pathological observations. Among his writings are included descriptions of syphilitic aneurysms, acute yellow atrophy of the liver, pneumonia with consolidation of the lungs (he appreciated that in pneumonia the lung had "the substance of liver" i.e., hepatization), meningitis due to acute otitis, hyperostosis frontalis, cancer of the stomach, gastric ulcer, gall stones, endocarditis, mitral stenosis and other valve deficiencies, coronary sclerosis, Tetralogy of Fallot, regional ileitis. He even gives the first description of "heart block" which he describes as "epilepsy with a slow pulse". An analysis of *De Sedibus et Causis Morborum* (1761) shows that he practically covered every phase of gross pathological anatomy[48].

Morgagni was a man familiar with the concept of "contagion". He refused to do autopsies on persons who had died of tuberculosis, smallpox or rabies.

Here one sees a major contributor to medicine, one who greatly influenced medical students of this period. Even John Morgan, later founder of the University of Pennsylvania Medical School, noted about *De Sedibus* that "the Edinburgh professors . . . appreciated its significance at once[49]". Morgagni's great contribution, one certainly still not lost, was his investigation of the disease process by tracing it back to the organ that caused it, i.e., "The Seats and Causes of Disease".

One of the significant theories medical students were confronted with in this period was the "Phlogiston Theory" developed by Georg Ernst Stahl. He based his theory on the concept that a combustible substance loses something when it is burned. Metals, for example, are composed of two things, *calx,* which is different in each different metal, and *phlogiston,* an agent which is part of all combustible substances. When a metal is fired the phlogiston is released while calx remains behind. This was the dominant theory until 1777 when Lavoisier showed it to be incorrect. Stahl also proposed a system called "Animism" which was the ultimate life principle, the primary regulator of health without which death occurs. It was a balance in this "animism" that the physicians always attempted to achieve, this by bloodletting, emetics, cathartics, purging, etc.[50]

To continue with the Phlogiston theory, this concept was exploded by Antoine L. Lavoisier (1743-1794) in 1775 when he published his major paper "On the nature of the Principle which combines with metals during their Calcination". In this paper he named "oxygen" and overthrew, along with Priestley, the Phlogiston theory. He also recognized that respiration was a oxidation process and that expired air contained CO_2, described in 1777 in "Experiences sur la respiration des animous". And in 1780 with the mathematician LaPlace (of LaPlace's Principle) he concluded that "Respiration is therefore a combustion, slow it is true but otherwise perfectly similiar to the combustion of coal[51]". The irony is that Lavoisier was found guilty on May 8, 1794 of "mixing tobacco with water and ingredients harmful to the health of its citizens". Thus being an enemy of France, and as with the rules of the French Revolution he was guillotined on May 9, 1794—so went "the destroyer of the Phlogiston Theory and . . . the father of modern chemistry[52]".

Another great physiologist of this period was Stephen Hales (1677-1761), a minister-physician who in the quiet of his parish carried out many of his experiments. His classic experiment was in 1711, when "he tied a brass tube into the crural artery of a horse, attached a glass tube nine feet in length to the brass tube and on 'untying the ligature on the artery, the blood rose in the tube eight feet, three inches perpendicular above the level of the left ventricle of the heart'—the first recorded estimation of the blood pressure[53]". His other contributions included measuring the cardiac output, an analysis of peripheral resistance, and the effects of different drugs on the vessel diameter and resistance; all this besides a whole series of botanical experiments.

Just to highlight other major works medical students were exposed to, the following is a brief summary of the work being done in this period. William Smellie published his *Midwifery* in 1752. He taught obstetrical courses using leather covered manikins made of human bones. He introduced the steel-lock forceps in 1744, the curved and double curved forceps in 1751-52. J. Daviel, in 1752 published a treatise on extraction of cataracts. A. DeHaen in 1758 employed thermometry in clinical work, his bedside use of this instrument was one of the first. In 1762 Plenciz stated his theory of "Contagium animatum". In 1773 James Lind showed the possibility of delousing and prevention of typhus by "baking clothes". He was a founder of naval hygiene and urged the use of lemon juice by the British Navy in the treatment of scurvy (1753). Benjamin Franklin described in a letter to George Wheately of London on May 2, 1785 the bifocal lenses; published an account of the success of smallpox inoculation in America and England (1759), developed a flexible catheter; produced his famous stove and treated paralysis with electricity. Louis Galvani (1737-1798), of electrical fame, was working in the laboratory one afternoon when his wife brought in some frog legs for dinner. These by chance were placed on a table close to some experiments being carried out with electricity. One of Galvani's assistants accidentally touched a nerve in the thigh of one of the frog legs with an electrically charged instrument. The leg muscles became "instantly and powerfully convulsed". Upon this foundation of serendipity he constructed a major theory of science[54].

Training in Clinical Medicine

Contrary to some of our major thinkers of today, bedside medicine did not begin with Osler. The eighteenth century European medical student was fortunate in that he was riding on the breezes of medical reform provided by the changes of the seventeenth century. If one stops and looks at the first half of the eighteenth century one sees a period of pause and consolidation, a period in which the major advances of the seventeenth century were allowed to assimilate. In 1636, Leyden instituted the first clinical teaching course for medical students. Sylvius in the second half of the seventeenth century added laboratory instruction to clinical teaching. Herman Boerhaave began bedside examination and even went so far as to follow his deceased patients into the autopsy room. His students followed and were in turn taught the essentials of pathology, anatomy, and the disease processes[55]. The clinical faculties, for the first time, were beginning to appreciate the significance of bedside teaching. Oliver Wendell Holmes in his *Medical Essays*[56] (1888), succinctly gave the reasons why this area of instruction was and is still today, so important. Holmes noted: "The most essential part of a student's instruction is obtained, as I believe, not in the lecture room, but at the bedside. Nothing seen is lost; the rhythms of disease are learned by frequent repetition; its unforeseen occurrences stamp themselves indelibly in the memory. Before the student is aware of what he has acquired, he has learned the aspects and course and probable issues of the diseases he has seen with his teacher, and the proper mode of dealing with them far as his master knows it[56]". Holmes goes on to note even further the gains of clinical instruction when he writes: "If memory gains so much by mere rhythmical association, how much more will it gain when isolated facts are brought together under laws and principles, when organs are examined in their natural connections, when structure is coupled with function, and healthy and diseased action are studied as they pass one onto the other! Systematic, or scientific study is invaluable as supplying a natural kind of mnemonics, if for nothing else. You cannot properly learn the facts you want from Anatomy and Chemistry in any way so easily as by taking them in their regular order, with other allied facts[57]".

The American medical student in Europe, having learned his basic sciences in the university environs, now set out to refine his clinical skills in the hospitals of Europe and Britain. A major endport for development of these skills was the City of London. Two months to a year of dissecting under a good surgeon, a year of walking the wards of Guy's, St. Bartholomew's, and St. Thomas'; all were necessary to provide the skills of a good physician. London, in this period, was under the rule of George III, the monarch from whom we severed our ties. The population of London in 1750 was 676,750 and by 1801 it had increased to 900,000. In 1750 deaths in London greatly exceeded births. A reversal began to occur in 1760 due to improved medical services and a decreased drinking of cheap gin[59]. London provided a mecca for deliverance of health care. "Dysentery, typhus, typhoid, tuberculosis, venereal diseases, deformities, and the cruel fractures of the draymen and carters filled the hospitals of the great metropolis with such a number and variety of cases as [John] Morgan could not see in all America in a whole lifetime of practice[59]". The excellent opportunities for clinical instruction led Morgan to register at St. Thomas Hospital in the winter of 1760-61. With his fellow students he followed the attending physicians where for example on Saturdays "when the entire medical and surgical staffs—carrying their gold-head canes—made solemn progress through the wards, consulting together on every difficult case or where surgery was indicated . . . When an operation was to be performed, a notice was posted on the operating-room door, and all pupils attended who wished. When an accident case was brought in, if there was time, an attendant called the 'surgery-man' gave Morgan and the other pupils personal notice[60]".

William Shippen, a founder of the University of Pennsylvania Medical School, was a graduate of Edinburgh and learned his clinical medicine in London. We are most fortunate in that he kept a six month diary of his hospital studies, which has been published[61]. No better insight into clinical teaching of this period has been provided. One cannot but be impressed at all a medical student was allowed to do in a London Hospital. Besides the usual academic lectures, students attended, wrote up and prescribed for patients. For example on July 20, 1759 Shippen "attended Dr. Smith's lecture at 2. Spent the afternoon and evening at 3 labours and 11 o'clock a fracture of leg at Guy's Hospital"[62].On July 28 he saw a skull fracture at Guy's, attended lectures, and autopsied for two hours, and finished the day with an examination of his patients. Sept. 5 was a big day where he saw " . . . several smallpox, 3 or 4 die, saw Mr. Baker perform 3 operations, a leg, breast, and tumor from a girl's lower jaw inside. Mr. Warner extracted a large stone from urethra of a man and pinn'd the incision up as in Harelip[61]". Experiments on live animals for didactic purposes were done, as he notes on Nov.3 he was busy in "opening a Live Dog to see the lacteals and thoracic duct etc." Another day involved breakfast with Dr. Fothergill, saw a surgeon cut for stone on 3 people and examined 17 pregnant women[64]. As with today's medical student these Colonial students were expected to be knowledgeable on their cases, make bedside examinations and in the evening read their Syndenham, Cullen and Boerhaave so as to look bright and alert for their presentations the following day.

Bedside examination in this period became rather sophisticated. Pragmatic observations using the patients' clinical signs became the rule. Pulse-measures and thermometers were known, having been developed by Sanctorius and Galileo, but were usually impractical and not always of proven use at the bedside[65]. But this is not to say they were not used. Theophile de Bordeu published a small volume on the pulse in 1756 ("Recherches sur le pouls par rapport aux crises", Paris) with which all London students were familiar. This work exceeded Solano (Francisco Solano de Luque. 1685-1738 "New and extraordinary observations concerning the prediction of various crises by the Pulse", London, 1741) in describing the different varieties of pulses one encounters in practice. He also had an interesting dogmatic view of the body as noted by Garrison: "He held that the organs of the body, with several functions, are federated with and dependent upon one another, but presided over and regulated by the stomach, the heart and the brain, which he called the 'Tripod of Life'. Next in importance were the nerves and the glands, the former centralizing the different functions of the body, and consequently, governing the secretions of the latter . . .[66]".

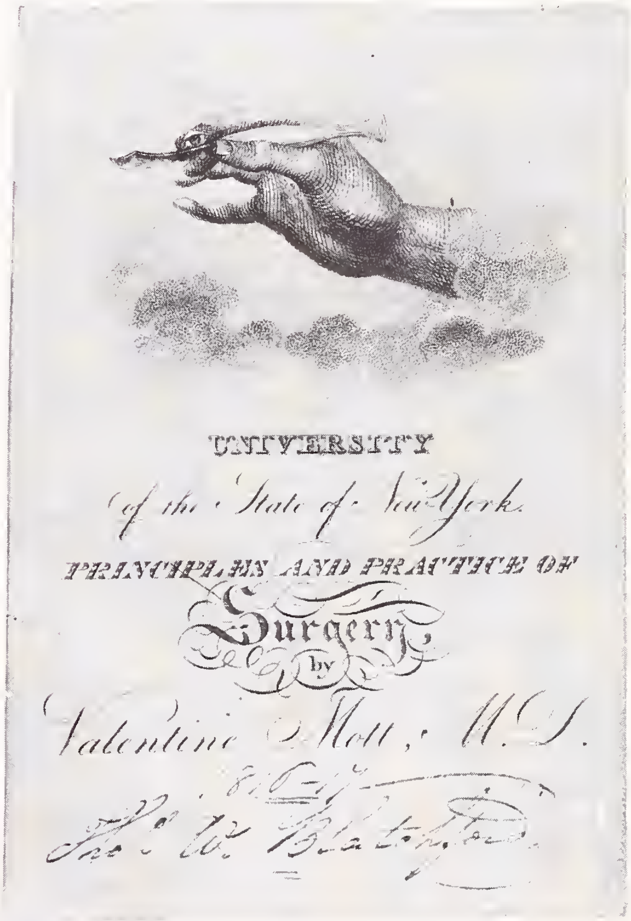
Anton de Haen, a student of Boerhaave, also advanced clinical bedside instruction and introduced thermometry in clinical work. He used both thermometry and employed electrotherapy at the bedside. As he was also a devout believer in witchcraft, one might wonder how that would influence his treatments.[67]

The development of the concept of blood pressure has already been discussed with the works of Stephen Hales. A Viennese physician, Leopold Auenbrugger developed the technique of percussion, that is, the determination of the conditions of the organs of the thorax by listening to the echo caused by thumping on the chest. He developed this concept by remembering how as a child, he would watch his father test the level of wine in his casks by rapping on the outside. He published his findings in 1761[68] and they were ignored. It was a translation in 1808 by J.N. Corvisart that made this technique universally recognized[69]. The microscope, well developed and used extensively by Leeuwenhoek and Hooke was still not used by the medical student. We also had to wait until 1819 for Laennec to present his new instrument for listening to body sounds—the stethoscope.

For treatment at the bedside the medical student had a relatively limited armamentarium by today's standards. By the close of the Revolutionary War, "we find blood-letting, purges, vomits, bark, opium and mercury all used with more or less freedom throughout the profession[70]". A type of what one might call medical folklore existed which taught that the colon survived as the sink of iniquity and as such it needs to be cleaned out on occasion. Hence the purges, vomits, and uses of opium. Present America's preoccupation with immovable bowels seems to hold this statement to be correct even today. By scarification, arteriotomy and venesection; by purgatives, congruents, plasters, liniments, boluses, etc, the patients were treated. It would seem from these treatments that medical students were learning techniques designed to scare a patient into getting well. After so many blood-lettings, purgings and calomel swallowings one had to get well just to get rid of these "healers". Their treatments were even performed on friends. Shippen was called upon to treat his Cousin Sterling whom he bled and "bled Miss DeBerdt too who was unwell". The next day in his diary he notes "my patients much better[71]". Would it be too cynical to say that one fear cured another one? The arbitrariness of when to use venesection and under what conditions can be seen in this excerpt from W. Cullen's, First Lines of the *Practice of Physic*[72]. The circumstance under which and the manner in which venesection is conducted are determined by:

1. The nature of the prevailing epidemic
2. The nature of the remote cause
3. The season and climate in which the disease occurs
4. The degree of phlogistic diathesis present
5. The period of the disease
6. The age, vigour, and plethoric state of the patient
7. The patient's former diseases and habits of bloodletting
8. The appearance of the blood drawn out
9. The effects of the bloodletting that may have been already practiced

An advantage of learning clinical medicine in London in this period was the opportunity to take classes from some of the specialists in the city. Few American students bent on a European medical education missed the chance to learn anatomy from the Hunter brothers. These two brothers, John and William, of strikingly different personalities taught one of the finest and most complete courses in anatomy. Using daily lectures and dissections the "Students practiced operations on cadavers, learned to prepare and mount anatomical and pathological specimens and were taught the art of injection[73]". William Hunter used this technique of injecting organs to see structure in order to demonstrate the separation of the maternal and fetal circulation. Hunter also used vivisection to demonstrate experiments. A common experiment was to feed a dog with a rich fat-filled meal and then study the lacteals. Evenings were devoted to discussion over supper with the Hunters on the day's work. London students could also take courses in midwifery from Colin Mackenzie or William Smellie. From Shippen's diary we can see from his studies under Mackenzie that "he ceased to be an onlooker. He not only attended labours, he delivered patients . . . living laborious which might extend to their full twenty-four hours when he was called upon a case[74]".



UNIVERSITY

of the State of New-York.

PRINCIPLES AND PRACTICE OF

Surgery,

by

Valentine Mott, M.D.

Jno. W. Blatchford

Having now completed his medical and clinical instruction, the Colonial medical doctor, armed with a degree from a prestigious European university, returned home. This exposure to the European system of medical education, the basic sciences combined with the clinical tours of hospitals provided a benchmark for two separate groups to form medical schools in New York and Philadelphia. With this insight into the European style of education, which provided the major influence in the development of our schools, we can now move to the development of our own Colonial medical universities.

The Colonial Medical Education

Formal medical education in this country had its beginning in the 1760's with the return from Europe of two groups of individuals trained in the European medical tradition. These physicians, realizing the excellence of the schools on the Continent and in Britain, hoped to set up a scholastic system designed to bring standards and reforms to the medical system that was in a deplorable state here. Both the University of Pennsylvania (1765) and King's College (1767) were organized on the concept of a European system that places a medical school within a university complex. The British were somewhat different in that their schools were associated with hospitals rather than universities.[75, 76]

Two treatises were published in this period, one by John Morgan[77] (1765) and one by Samuel Bard[78] (1769) which outlined the content of a medical school curriculum, graduation requirements and admission requirements with even the role of a hospital for clinical instruction being discussed. For the first time, under the influence of European-trained Americans, the United States was to see a system designed to produce high caliber physicians.

University of Pennsylvania started out on a lesser scale with a faculty of two in 1765 and presented only two courses, these being "lectures on two of the most important branches of medical knowledge". Their courses were designed for apprentices attending to physicians of the Pennsylvania Hospital. Initially they hoped to provide a curriculum only designed to help partially trained apprentices; with time a full curriculum was set up.[79, 80]

On September 27, 1767 an announcement appeared in the *New York Gazette* (Weekly Postboy) which proclaimed the opening of King's College Medical School. This institution started with a full faculty of six and encompassed all the major disciplines of medicine. Stookey in an excellent article[81] describes the rather rigorous requirements for admission and graduation from King's College. King's College went on to issue the first M.D. degree in 1770 to Robert Tucker. Our third medical school, Harvard University, was not to get its start until 1789, when at a local medical society meeting in Boston, a member "made a proposition to the club, that as there are nearly a dozen pupils studying in town, there should be an incipient medical school instituted here for their benefit[88]".

Medical Education Courses Before the Development of Medical Schools

Besides the physician-apprenticeship already mentioned, courses were occasionally put together for purposes of providing training to apprentices and physicians who wished a more thorough education in specific subjects. In almost all cases these were courses dealing with anatomy and with surgical procedures. In 1641, the Massachusetts Bay Colony passed its "Body of Liberties" which provided a body for use in "Anatomie"[83]. There shortly followed in 1647 the first recorded dissection in America by Giles Firmin, Jr. In 1717, Dr. Cadwalader Colden attempted through legislative action to set up a course of medical lectures in Pennsylvania. Research by Packard[84] implies this was an unsuccessful attempt. The first teaching of anatomy by regular dissection occurred under the direction of Dr. Thomas Cadwalader (1708-1799) of Philadelphia. Cadwalader had been a pupil of Cheselden, the famous anatomist of London. His course was designed in 1731 for apprentices and physicians who wished to know the "Anatomie of the body". Cadwalader described many of these dissections in his book *Essay on the West-Indies Dry-Gripe* which was printed by Benjamin Franklin in 1745.

In New York City promising young medical apprentices and physicians who wished to tune their anatomical skills could take a course conducted by Drs. John Bard and Peter Middleton who "injected and dissected for the instruction of young men then engaged in the study of medicine" the body of a hanged criminal executed in 1750 for murder.[85, 86]

Two years later, in the January 27, 1752 *New York Weekly Postboy* an announcement appeared, authored by Thomas Wood, declaring that a series of lectures on a "Course of Osteology and Myology . . ." would be delivered in New Brunswick for interested persons.[87, 88]

Interested residents of Rhode Island were offered a series of anatomical lectures by a relative of the famous Hunter brothers of London. This William Hunter arrived in the Colonies in 1754, promptly set up a course in anatomy and for the next two years offered courses for all who would pay. His series also dealt extensively with surgical lectures and hence were well attended.[89]

In 1752, with the opening of the Pennsylvania Hospital in its temporary quarters, an apprenticeship lecture and clinical training course was established. Apprentices worked with the attendings, acted as dressers and generally were indentured for a period of five years to the hospital. At the end of five years the successful graduate was provided with "a suit of cloathes" and an "engrossed certificate"—sounds as if this young man was being released from prison[90]!

On November 11, 1762, an advertisement appeared in the *Pennsylvania Gazette* announcing a course of anatomical lectures. William Shippen, the course instructor, was later to become founder of the University of Pennsylvania Medical School. This was a course designed for demonstration of the anatomy and structure of the human body, with also a discussion of disease and cases. Lectures were also provided on bandaging and finally a discussion of the gravid uterus and midwifery. Tickets could be purchased for 5 pistoles. If one wanted to learn to inject and dissect then add another 5 pistoles. Those gentlemen who wanted to come for "curiosity and entertainment" had to pay 5 pistoles too[93]! Shippen commenced his course with twelve students[93].

Shippen, three years later, on January 31, 1765 (see *Pennsylvania Gazette*) started a course for "man-midwifes"—a very unpopular subject which he attempted to defend in this *Gazette* article. In this period of our history it was considered indecent for a man to be in attendance of a woman during delivery. He claimed most women midwives were "unskillful and dangerous"; his course of lectures was to correct ignorance and provide skillful instruction to midwives and to those men engaged in surgery. The course itself was quite extensive, covering the bones, organs (placenta and uterus), circulation and nutrition of the foetus, menses, labours, etc. A lecture on proper diet was included. For historians he even provided a history of midwifery[94].

King's college of New York provided an initiative for early medical teaching by appointing Samuel Clossy, a medical immigrant from Ireland, to a professorship in Natural Philosophy. Under this professorship he taught courses in "Anatomical Prelections" from 1763 up until 1767 when with the founding of King's College Medical School, he became its first professor of anatomy [95,96].

In other parts of the Colonies, courses for interested medical people were also being offered. In Baltimore, a course in anatomy was taught by Charles F. Wisenthal and in Philadelphia, by Abraham Chovet. In Boston, John Warren was teaching a course of anatomy; he later became the first professor of anatomy and surgery at Harvard.[97]

University Medical Education in the Colonies

This development of the state of medical education in the Colonies, viewed with the unique influence of the European medicus', allows us to approach and understand the medical curriculum as it existed in 1769 when our first two schools were in operation, one in New York and the other in Philadelphia. The eligible "Pre-Med" who approached the doors of Pennsylvania or King's College was expected to have completed studies in "Mathematics, natural sciences, Latin and if possible a modern language[98]". In the case of Pennsylvania the apprentice should also have acquired a knowledge of pharmacy and some of the fundamentals of medicine. With his background of a liberal education this colonial scholastic could expect to follow a curriculum graded from anatomy and the basic sciences to clinical instruction and experience on the local wards. He could expect his teachers with their European educations to be of the very brightest. In some cases he would be instructed by innovators who experimented and sought the secrets of nature. In contrast to a sixteenth century medical student who elected his professors "amid a hail of missiles" and determined their own courses, this student was to be then, as he still is today, an encyclopaedist[99]. With his Nikon mind he was expected to absorb and repeat all the many complexities of the system of the likes of Cullen and Boerhaave. Lecture was the sole form of communication except in the case of anatomy. Clinical, tutorial or laboratory instruction were rare in his first year. Mental conceptualization of subjects was the rule of the day. The American medical student did have one fortunate advantage over his European comrade. His lectures were not taught in Latin, although most of his texts were in the Latin form[100]. The colonial student could expect to learn three major fields of study: the basic sciences (chemistry, anatomy, physiology, botany, zoology and physic); with this basic knowledge he advanced to the theory and diagnosis of disease; finally, as with today's student, he was expected to make his ward tours for clinical instruction.[101]

As an interesting aside there was a movement in this period described by Reinhold to overthrow classical learning in Colonial America. Advocates of the movement urged "the study of the vernaculars, utilitarianism, vocationalism in education and dethronement of Latin and Greek from their regal position[102]". These timber-hewn utilitarians had Benjamin Franklin as a leader. Noah Webster also was involved in this movement to reorient education. Webster's views on education were "distrust of classical education; utilitarianism and practical education for specific causes, universal education, nationalistic emphasis, primacy of the English language and English grammar". This last view must have sold a lot of dictionaries. Thomas Paine and Benjamin Rush also were heavily involved in proselytizing the style of teaching.

The American medical student was expected to have an extensive library from which to draw the knowledge he needed. A survey of his oak bookcases would display the writings of Syndenham, Boerhaave, Van Swieten, Mead and Huxham; the physiology of Haller, the anatomy of Cowper, Cheselden and Monro; the surgery of Sharp Le Dran, Petit, and Pott; the midwifery of Hunter, Smellie, and Mackenzie; the materia medica of Lewis, and Quincy[103,104].

As was explained earlier in the section on Europeans, the American medical student in the classroom could be expected to be assailed with the "systemic" approach. Inculcation with medical theorists like Cullen and Boerhaave was the rule of the day. The American student, as did his European colleague suffered with these "speculative and unempirical systems", their major fault being "turning the student's attention away from the empirical observation toward rationalistic nosologies[105]". Here the physician-to-be was given a course in materia medica and taught systems of nosology whereby as mentioned earlier, the great scholars attempted to classify disease much as one classifies plants by the Linnaean system. By successfully identifying a disease and the class it belonged in one could mount a whole regimen of treatment from bloodletting and blistering to leeching.

Surgery was also taught but to a limited degree, for as Rothstein has noted: "Surgery textbooks of the period rarely discussed such elementary matters as preparing the patient and dressing and bandaging the wound[105]". In the case of midwifery it was a rare medical student in America who saw the birth of a child because of social restrictions of this period. Note this was not the case in Europe and Britain where students often attended women in labor.

A Pennsylvania student, safely ensconced in his high backed oak chair, could somnolently cruise the morning through John Morgan's lecture on the theory of medicine which followed the theory of von Haller's *Prime Linae Physiologiae*. In the afternoon Morgan would continue his lectures to the second-year class on diseases and treatments. One of the treatments found in a student's notebook of this period would be "careful diet, with bleeding followed by purges and emetics" when the "putrid state of blood" made "unloading the vessels" desirable. Fevers, Morgan would define as "accelerate or motion of the blood to preserve health or discharge something noxious from the body[106]". Later in the week Morgan would begin a series of lectures in materia medica espousing the rhetoric of Cullen. "Each article in the materica medica was considered under four aspects: Its natural history, its use in diet or medicine, its operation on the body and its pharmaceutical preparation. Every disease, Morgan told his students, might be cured by one of four means: by nourishment to supply the want of matter; by erodents, to take away the superfluous; by astringents, to strengthen the lax; and by emollients, to relax the rigid[107]".

After completion of the "basic sciences" the students were allowed to start their clinical rotations. In Philadelphia the students did their tours at Pennsylvania Hospital. Here they were expected to follow the house staff on rounds and attend clinical lectures. At King's College the students were taken to the Almshouse, Bridewell, or the Debtors' Prison[108]. With the completion of New York Hospital in 1791, King's College had its own attached hospital for teaching purposes. By 1792, a course in clinical medicine was offered which was required for graduation[109].

In some cases clinical teaching did not seem to work out too well. In 1774, several Pennsylvania students approached their provost and requested attendance no longer be required at [Thomas Bond] clinical lectures. They presented three reasons for not attending: 1. fees; 2. attendance was really a "novelty" and not something required in the European schools; 3. the third reason had to do with Bond's choice of lectures and his supposed "interfering with the business of other professors". They voted to maintain the clinical lectures[110]. It seems one could not please medical students even in Colonial America.

The Medical Resurrectionist

"The body-snatchers they have come
And made a snatch at me;
It's very hard them kind of men
Won't let a body be!
Don't go to weep upon my grave
and think that there I be;
They haven't left an atom there
of my anatomy[111]".

No analysis of Colonial American medicine would be complete without discussion of a trial most medical students underwent in this period—grave robbing for purposes of procuring bodies for anatomy courses. While everybody thought a surgeon or physician should have a good course in anatomy to develop his skills, most public people were revolted at the thought of a scene of human dissection. This procedure was considered a great irreverence and it was only in the case of some criminal convicted of some odious crime—only then could the townspeople justify dissection—and then it was considered "just fare" for the crime.

The first recorded legal provision for human dissection has been traced back to Ptolemy I who decreed that the bodies of executed criminals could be used for purposes of dissection[112]. It was here in these Alexandrian schools, with teachers like Herophilus and Erasistratus, that large numbers of human subjects were dissected for demonstration to students[113].

It was later in history that the anatomical theatres were devised for instruction, e.g., Bologna (1113), Padua (1222), and Messina (1224). The first permanently built anatomical theatre was erected in Padua in 1594. Before this time theatres were put up and torn down like gallows. The dissections tended to be more theatrical occasions for purposes of performances rather than for teaching anatomy. Anatomy was formally entered into the medical curriculum by Mundinus in the 1300's at Bologna. He wrote one of the original dissection manuals, which was used for the next 200 years.

The first necropsy recorded on this continent occurred in 1576 in Mexico. The first chair of Anatomy was founded in 1621 at the University of Mexico[115]. As noted earlier the Massachusetts Bay Colony passed its "the Body of Liberties" which provided a body for use in "Anatomie" in 1641. By 1647 Giles Firmin, Jr. had done the first recorded dissection[11].

By the time of the Revolutionary War, the teaching of anatomy in America had reached its nadir. Students at Pennsylvania and King's were seated on elevated benches in the anatomy halls and participated in the dissections only as spectators. The students were rarely allowed to descend and participate in any manipulation of the bodies. To overcome this handicap, students, being as resourceful as they are, went out and procured their own bodies to dissect. This behavior continued a tradition carried on by their European brethren for several centuries. The antiquity of this behavior can be appreciated when one realized that the first known human assault on a cemetery for purposes of procuring a body for dissection occurred in 1319. At this time four medical students and a professor were arrested and tried for body snatching[117].

There were laws in this period to provide the bodies of executed criminals for dissection but in no way was this a large enough supply. It was a quirk of English Common Law that stated dead human bodies were not "property" but any clothes or personal belongings within the caskets were. So as long as the grave robbers took the body nude and left behind the personal belongings they could not be tried. This is not to say the family would not attempt to lynch the student if he was caught slinking away with a relative over his shoulder. In 1788, England finally passed a law on grave robbing, but even then the offense was only classed as a misdemeanor. The Warburton Act of 1832[118], passed by the London Parliament finally rectified the problem, at least for the English. This law allowed unclaimed bodies in hospitals and workhouses to be sold for dissection. This act closed a major loophole by making it a crime to move a "dead body". England was actually forced to act because of its professional grave robbers, the "sack-em-up" or "grabs" men. These "gentlemen" would resort to murder to provide bodies, as evidenced by William Hare and William Burke, who together murdered sixteen Edinburgh slumdwellers. These bodies were supplied to the local instructors of anatomy[119].

In our own country, ressurrectionists were not a major problem; our local faculty and students were industrious enough. Examples were at Harvard, where in 1771, a group of undergraduates formed a society called the "Spunks" or "Spunkers". They apparently limited their attempts to pilfering the bodies of "corpses of friendless derelicts and criminals[120]".

Besides the students' misadventures, many a professor of anatomy had to defend himself publicly. William Shippen, Jr. of the University of Pennsylvania placed a notice in the *Pennsylvania Gazette* of January 11, 1770 in which he denied "sundry wicked and malicious reports of my taking up bodies from the several burying grounds of this place . . ." He goes on to state that his pupils were not doing it either. One of them, Joseph Harrison, had to give testimony to this fact before the Mayor[121,122]. On more than one occasion Shippen had to move rapidly out his back door due to the local residents' anger at his tactics.

Medical students also had to flee from the fury of mobs. Historical medical records disclose many occasions on which medical students had to drop their dissecting instruments and run from the wrath of the enraged populace. The most famous incident, was the "Doctors' Riot" of 1788 started by a medical student waving the arm of a cadaver from a window. This is only one of the many versions of this story. A mob gathered and became so infuriated the students and faculty had to be interned in the local jail for protection[123-125]. This riot actually worked to the benefit of the students because it led the courts in 1789 to add dissection to the penalty in cases of murder, arson, and burglary; later dueling was included too[126]. In Baltimore in the same year, 1788, Dr. Charles F. Wisenthal was conducting a dissection of a murderer with his medical apprentice when a mob attacked his house. The studies ceased at that point[127]. It was a "dissection riot" at Yale on January 12, 1824 that led to legislation by the Connecticut Legislature to provide bodies for local anatomy classes[128, 129]. Even as late as 1878 medical students were subjected to the harangues of irate crowds. In this case the students of the Medical College of Ohio took the body of John Scott Harrison, father of Benjamin Harrison. An intensive search by the Sheriff found the body attached to a "windlass in the chute which was used to hoist bodies up to the dissecting room[130,131]".

The skill and sleuthing of these medical students was such that the negroes and slaves of New York sent a petition to the Common Council on February 4, 1788, complaining of "Students of Physic, repairing to the Burying Ground . . . and under cover of night and in most wanton Sallies of excess, to dig up the Bodies . . . and mangle their flesh out of a wanton Curiosity and expose it to Beasts and Birds[132]".

Some students, rather than risk being caught in a graveyard would go to the almshouses disguised as relatives to claim a recently departed "relative"; or if all else failed they would bribe the undertakers or grounddiggers[133]. These last two techniques were quite popular among New York City medical students.

To appreciate the length to which medical students would go to procure bodies, the following more recent incident is an example. In Northfield, Minnesota on September 7, 1876 the Jesse James gang rode into town and robbed a bank. This robbery was witnessed by two medical students, one of whom shot and killed two of the robbers as they tried to ride out of town. These two gang members were buried that same day only to be "resurrected" that night by these same two medical students, placed in a barrel marked "Fresh Paint" and shipped to Ann Arbor. The students used these bodies in their fall anatomy course. The medical student who did the shooting kept his one skeleton after it was picked clean. He later set up practice only to have his office, complete with skeleton, burn to the ground years later, cremating the skeleton[134].

Because of irate citizens the universities did attempt to make some efforts to procure bodies legally and to condemn body-snatching. In the *Columbia University Minutes of the Faculty* for January 18, 1814 (Volume one, p 109) we see the following preamble and resolution:

> "Whereas rumors of a unpleasant nature are circulating purporting that bodies from the cemeteries of the City have been brought to the College for dissection; and whereas the Trustees of this College wholly discountenance such mode of obtaining subjects for anatomical purposes, therefore resolved, that the professor of anatomy be and he is hereby instructed to take special care that subjects procured for anatomical and surgical purposes be legally obtained, and that he superintend introduction of all such subjects and employment of them in a decorous and proper manner."

To realize that this resolution was ignored one only has to read an article published by the Demonstrator of Anatomy of this period, Dr. Valentine Mott[135]. In this article he reminisces on his experiences as an anatomy instructor around 1811. He recalls on "one occasion driving, in disguise, a cart containing eleven subjects and proud enough of my trophies". On another occasion he went out with his associate and a professor of obstetrics. Both dropped out in terror and Mott ended "lug[ging] the body, attired in its white robe by my own strength to the carriage . . . On arriving at the College, I found my valorous associate slowly recovering from his ague fit, by the aid of a strong glass of brandy toddy, and deeply lamenting his inability to assist me on the occasion".

Legislation was enacted to prevent body-snatching. The New York Legislature passed an act on January 16, 1789 which was designed "to prevent the odious practice of digging up and removing for the purpose of dissection dead bodies interred in cemeteries or burial places[136]". This law and others like it solved nothing. If anything, they added further stigma to dissection. Medical students needed anatomy and it would seem they would do anything to get cadavers. This style of procurement continued up into this century. Heaton[137] notes a series of charges were brought on March 15, 1922 against a teacher of anatomy and his students for body-snatching—this just 54 years ago. With acts like the "Bone bill" of 1854, Pennsylvania's Anatomy Law of 1883, Congressional Anatomy Bill of 1886[138], and Connecticut's Law of 1824[139] some facility was brought to the procurement of bodies. Today, no medical student worries about sleuthing graveyards under full moons. Instead he only complains of the number of bodies (i.e., the number of fellow students) assigned to his one cadaver.

Conclusion

From the medical apprentices, trained along the medieval craft guilds system to the European-trained medical student who came back to found his own university we have traced the development of the Colonial American medical student. We started in a period when we were nothing but plagiarists of the European teachers. Today, 200 years later, we see a reversal. Now it is the Europeans and the rest of the world who look to America for leadership in development of medical technology and teaching—an elegant example of the intellectual emancipation of the American medical mind over two centuries.

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ADDENDUM

American medical students at our first medical schools were required to purchase tickets from each of their individual course instructors. These tickets were then handed in at the beginning of each lecture, much like one hands over a theatre ticket today for a performance. Since medical professors of this era depended on these students for their sole income, these tickets became quite important. As with any ephemera these tickets have become quite scarce today. The examples shown indicate the range and the sometimes elaborate styles these admission tickets could assume.

"Soon after, the 'Doctor' being a French general officer, came with great politeness to inquire if I wanted anything, and to offer me every service in his power. I use the English word "Doctor", because the distinction between surgeon and physician is as little known in the Army of Washington as in the time of Agamemnon. We read in Homer that the physician Macaon, himself, dressed wounds; but our physicians, who are no Greeks, will not follow that example. Americans conform to the ancient custom and are none the worse for so doing; they are well pleased with their doctors, whom they hold in the highest consideration."

The Marquis de Chastellux, *Travels in North America,* 1780

A MISCELLANY OF QUOTES, CIRCA 1776

John Morgan (1735-1789). One of the founders of the Medical School of Pennsylvania and its first professor of the Theory and Practice of Physic, Morgan wrote, in 1765, the first American publication on medical education. It is entitled, "A Discourse upon the Institution of Medical Schools in America." In the Section called, "Prerequisites to the Study of Medicine," he says,

"Young men ought to come well prepared for the study of medicine, by having their minds enriched with all the aids they can receive from the languages and the liberal arts . . . there is no art yet known which may not contribute something to the improvement of medicine; nor is there any one which requires more assistance than that of physic from every other science. (Languages, liberal arts and the sciences) . . . are necessary to facilitate progress in the healing arts. They embellish the understanding, and give many peculiar advantages, unattainable without them."

William Shippen (1736-1808). The following is an excerpt from a letter that Shippen wrote home while studying medicine in the teaching hospitals of London, approximately 1759. Shippen, after graduating from the College of New Jersey (Princeton) in 1754 as valedictorian, studied medicine with his physician father in Philadelphia for four years. Then he went abroad in 1758 to complete his medical education. He was the founder of the first medical school, and was its professor of anatomy and surgery (1765), at the age of 29.

"Examined particulars in hospitals several smallpox three out of four died. Saw Mr. Baker perform three operations a leg, breast, and tumour from girl's lower jaw inside, very well operated. Mr. Warner extracted a large stone from urethra of a man and pinn'd the incision up as in harelip. Dress'd in afternoon for Camberwell Assembly where forty young ladies most of them pretty and genteel, elegantly dressed in flounced trollopes. I danced with Miss Jeffery of Peckham."

Benjamin Rush (1745-1813). A signer of the Declaration of Independence, Dr. Rush graduated from Princeton in 1760, studied with Dr. Redman of Philadelphia for six years, and then received his M.D. at Edinburgh in 1768. He then studied medicine further in London and Paris, before returning to Philadelphia in 1769 to practice and teach. Redman, himself, had graduated from the University of Leyden in 1748 shortly after Boerhaave's death. In the following, Rush describes his apprenticeship days.

"In the month of February, 1761, I began the study of medicine and continued constantly in my master's family and shop till July, 1766. During this period I was absent from the business about eleven days and never spent more than three evenings out of the house. My master was in the most extensive business of any physician in the city, and as he had at no time more than two apprentices, he kept them constantly employed. In addition to preparing and compounding medicines, visiting the sick and performing many little offices of a nurse to them, I took the exclusive charge of his books and accounts. The confinement and restraint which now imposed upon me gave me no alternative but business and study, both of which became in a short while agreeable to me. However laborious and self-denied my situation was during my apprenticeship I owe much to it. It rendered diseases in all their forms and symptoms familiar to me, and gave me a facility in knowing them which is to be acquired in no other way."

Benjamin Rush (December, 1775). "In December I visited General Washington in company with Colonel Joseph Reed at the General's quarters about ten miles above Bristol, and four from the Delaware. I spent a night at a farmhouse near to him and the next morning passed near an hour with him in private. He appeared much depressed and lamented the ragged and dissolving state of his army in affecting terms. I gave him assurance of the disposition of Congress to support him, under his present difficulties and distresses. While I was talking to him I observed him to play with his pen and ink upon several small pieces of paper. One of them by accident fell upon the floor near my feet. I was struck with the inscription upon it. It was, "Victory or death."

Benjamin Rush. "Celibacy is a pleasant breakfast, a tolerable dinner, but a very bad supper. Supper is not only bad, but, eaten alone, no wonder it sometimes becomes a predisposing cause to madness."

Rush, the father of thirteen children, wrote these words in a discussion of the causes of insanity.

James Thacher (1754-1844). Thacher was a physician of Plymouth, Massachusetts. In 1775 he began as army surgeon with the Revolutionary forces. His *American Medical Biography,* published in 1828, is well-known as an excellent source for the study of early American medicine.

"24th October, 1777. Amputating limbs, trepaning fractured skulls, and dressing the most formidable wounds, have familiarized my mind to scenes of woe. A military hospital is peculiarly calculated to afford examples for profitable contemplation and to interest our sympathy and commiseration. If I turn from beholding mutilated bodies, mangled limbs, and bleeding, incurable wounds, a spectacle no less revolting, is presented, of miserable objects, languishing under afflicting diseases of every description—here, are those in the mournful state of despair, exhibiting the awful harbingers of approaching dissolution—there, are those with the emaciated bodies, and ghastly visage, who begin to triumph over grim disease, and just lift their feeble heads from the pillow of sorrow. No parent, wife, or sister, to wipe the tear of anguish from their eyes, or to soothe the pillow of death, they look up to the physician as their only earthly friend and comforter, and trust the hands of a stranger to perform the last mournful duties. Frequently have I remarked their confidence in my friendship, as though I was endeared to them by brotherly ties. Viewing these unfortunate men as the faithful defenders of the liberties of our country, far separate from their dearest friends, who would be so lost to the duties of humanity, patriotism, and benevolence as not to administer to their comfort, and pour into their wounds the healing balm of consolation?"

Benjamin Franklin (1706-1790). Dr. John F. Fulton has described Benjamin Franklin, along with Beaumont and Weir Mitchell, as "one of three Americans whose writings exerted a profound influence upon medical thought in Europe prior to 1900." Franklin was elected a Fellow of the Medical Society of London in 1787, and in later years the Benjamin Franklin Lecture was established in his honor. Sir Zachary Cope, in the course of the Benjamin Franklin Lecture to the Medical Society of London, about twenty years ago, had this to say, "Those who have studied the life of Benjamin Franklin will agree that he would have been the first to acclaim the scientific method. I think it likely that, if he had been born in this generation, he would have chosen to be a physician, or possibly a surgeon."

What is believed to be the first medical monograph published in America was "An Essay on the West-India Dry-Gripes", published in Philadelphia in 1745 and printed by Benjamin Franklin. The essay was written by Thomas Cadwalader. The Dry-Gripes was a disease commonly observed in the colonies, but also known in Southern France as *Colica Pictonum* and in England as *Devonshire Colic.* It was Sir George Baker (1722-1809) who found that it was due to lead in the cider vats (in West India it was the rum), but in an address to the College of Physicians' of London (1785) he stated that his suspicions had been "greatly confirmed by the authority of Dr. Franklin of Philadelphia."

The following is an excerpt from a letter written in 1786 by Benjamin Franklin to Mr. Benjamin Vaughan: "The first thing I remember of this time, was a general discourse in Boston when I was a boy, the complaint from North Carolina against New England rum, that it poisoned the people, giving them the dry bellyache and loss of the use of their limbs. The distilleries being examined on the occasion, it was found that several of them used leaden still-heads and worms, and the physicians were of opinion that the mischief was occasioned by the use of lead. Legislature of the Massachusetts there upon passed an act (July 31, 1723) prohibiting, under severe penalties, the use of such still-heads and worms thereafter."

Benjamin Franklin designed and made a flexible catheter for his brother John, who suffered from kidney stones. In a letter to his brother he asked the anticipative question, "May not one guess by holding Lime Water sometime in one's Mouth, whether it is likely to injure the Bladder"?

Benjamin Waterhouse (1754-1846). The first professor of the Theory and Practice of Physic, at the Harvard Medical School. In 1800, having vaccinated his own children with Jenner's vaccine, he arranged for one of them to be inoculated with smallpox, as an open demonstration of the vaccine's effectiveness. Thus was vaccination introduced to America—the most important medical event in the United States until the discovery of anesthesia almost half a century later.

"The doctor chose to try the experiment on the boy of twelve years of age . . . whom he inoculated (with smallpox) in my presence by two punctures, and with matter taken that moment from a patient who had it pretty full upon him . . . On the fourth day the doctor pronounced the arm to be infected. It became every hour sorer, but in a day or two it died off and drew well, without producing the slightest trace of a disease; so that the boy was dismissed from the hospital and returned home the twelfth day after the experiment. One fact, in such cases is worth a thousand arguments."

The first book printed in America on domestic medicine was the *Poor Planter's Physician.* The book was written anonymously but was probably the work of John Tennant of Virginia. It was printed in Williamsburg and Annapolis in 1734, and was priced at one shilling. The following is a quote from this book, which has been reproduced here through the courtesy of Sarah K. Peterson, M.F.A.:

"Our country is unhappily subject to several sharp distempers. The multitude of marshes, swamps and great waters send forth so many fogs, and exhalations, that the air is continually damp with it: This, in spight of our precautions, is apt to shut up the pores all at once, and hinder insensible perspiration. From hence proceed fevers, coughs, quinsies, pleurisies, and consumptions, with a dismal train of other diseases, which make as fatal havock here, in proportion to our number, as the plague does in the eastern parts of the world. In the meantime, this is a cruel check to the growth of an infant Colony, which otherwise, by the fruitfulness of our women, and the great number of recruits, sent from our Mother Country, would in a few years, grow populous and consequently considerable."

"The Town of Hartford is not worth lingering over, either when traveling through it or when speaking of it. It consists of a long, very long, street, parallel to the river, which is fairly considerable and continuous, that is, the houses are not far distant from each other. It has, furthermore, many advantages; everything is Hartford for six leagues around; but East Hartford, West Hartford, and New Hartford are distinct towns, although composed of houses scattered throughout the country. From a very high plateau on the road to Farmington, one discovers not only all the possible Hartfords, but all that part of the continent watered by the river of that name (ie, the Connecticut) situated between the eastern and western chains of mountains. This place is called Rocky Hill. The houses in West Hartford, frequently disburse, and sometimes group together and everywhere adorned with trees and meadows, make of the road to Farmington a *jardin anglais,* which art would have difficulty in equaling."

The Marquis de Chastellux, *Travels in North America,* 1780.

"This is another highly important branch of medical education. Delicacy has thrown a veil around this subject which precludes all remarks before this audience. It may not, however, be improper to state, that Dr. William Shippen of the Philadelphia School, by his suavity of manners and correct deportment, was the first to remove these prejudices, which had long existed in this country, in opposition to male accoucheurs; and I trust that his pupils, and those who they have instructed, have never violated the laws of strict propriety in their professional intercourse."

Edward Cutbush, speaking at the opening of the Medical Institution of Geneva College, 1835.

Take This Quiz and Get a (19th-Century) License

The medical licensing examination administered by the Examining Committee of the Connecticut State Medical Society on March 14-15, 1899. Candidates selected eight questions in each group.

Materia Medica and Therapeutics

1. What is the physiological action of Tartar Emetic?
2. Contrast the action of Strychnine and Potassium Bromide on the nervous system.
3. What are the physiological effects of Chloroform inhalation? How do they differ from those of Ether?
4. What are the physiological effects upon the eye of Cocaine, of Eserine and how are these effects produced?
5. What are the symptoms of arsenical poisoning and the antidotes?
6. What are the therapeutic uses of cold?
7. What is the treatment of acute Pleurisy?
8. Give the therapeutic uses of Belladonna.
9. How would you treat a case of acute Uremia?
10. Write a prescription in Latin unabbreviated, containing four ingredients to be used in Chronic Bronchitis, and give the reasons for using each ingredient.

Surgery and Pathology

1. Describe the process of repair in an aseptic incised wound.
2. What is the difference pathologically and as to causation between Dry and Moist Gangrene?
3. What are the symptoms, kinds and treatment of Erysipelas?
4. What would you do in a case of strangulated indirect inguinal hernia?
5. Give differential diagnosis between Chancre and Chancroid.
6. What are the varieties of Aneurism?
7. Describe the treatment of Aneurism of the brachial artery.
8. What are the complications which may follow a simple fracture?
9. What is Keloid?
10. What is the difference between Syme's and Pirogoff's amputation?

Practice, Pathology and Diagnosis

1. Give the clinical history of Lobar Pneumonia.
2. Differentiate between Scarlet Fever and Measles.
3. Give the pathology of Chronic Diffuse Nephritis.
4. What are the causes of hemorrhage of the Stomach and Intestines?
5. Pathology of Endarteritis?
6. What are the symptoms of Anterior Poliomyelitis?
7. Give the diagnosis of Pericarditis.
8. Describe Herpes Zoster.
9. What are the symptoms of renal Calculus?
10. Complications of Typhoid Fever?

Physiology

1. Discuss the constituents and coagulation of the blood.
2. Describe the circulation of the blood in the heart and name the valves.
3. What is the nervous mechanism of respiration?
4. What is the physiological function of the stomach and how is it performed?
5. What is animal heat and how produced and maintained?
6. What is secretion and excretion, and give examples of each?
7. Name the different forms of muscular tissue and give examples of each.
8. What is the origin and function of the sciatic nerve?
9. Draw a diagram illustrating the action of the crystalline lens.
10. What is metabolism?

Chemistry and Hygiene

1. Give the chemical formulae of (A) Bromide of Soda, (B) Chloride of Zinc, (C) Sulphuric Acid, (D) Water.
2. What is meant by a chemical antidote?
3. Name the chief constituents of urine.
4. How would you determine the total daily amount of solids passed in the urine?
5. What is the source and significance of urea in the urine?
6. What is the average composition of pure atmospheric air? Give per cent by volume.
7. What are the chief sources of contamination of the air?
8. What are the chief water-borne diseases, and how would you determine the germs of each in suspected water?
9. What disease would you report to the health-officer?
10. How may immunity to yellow fever be acquired; how to small pox; how to rabies?

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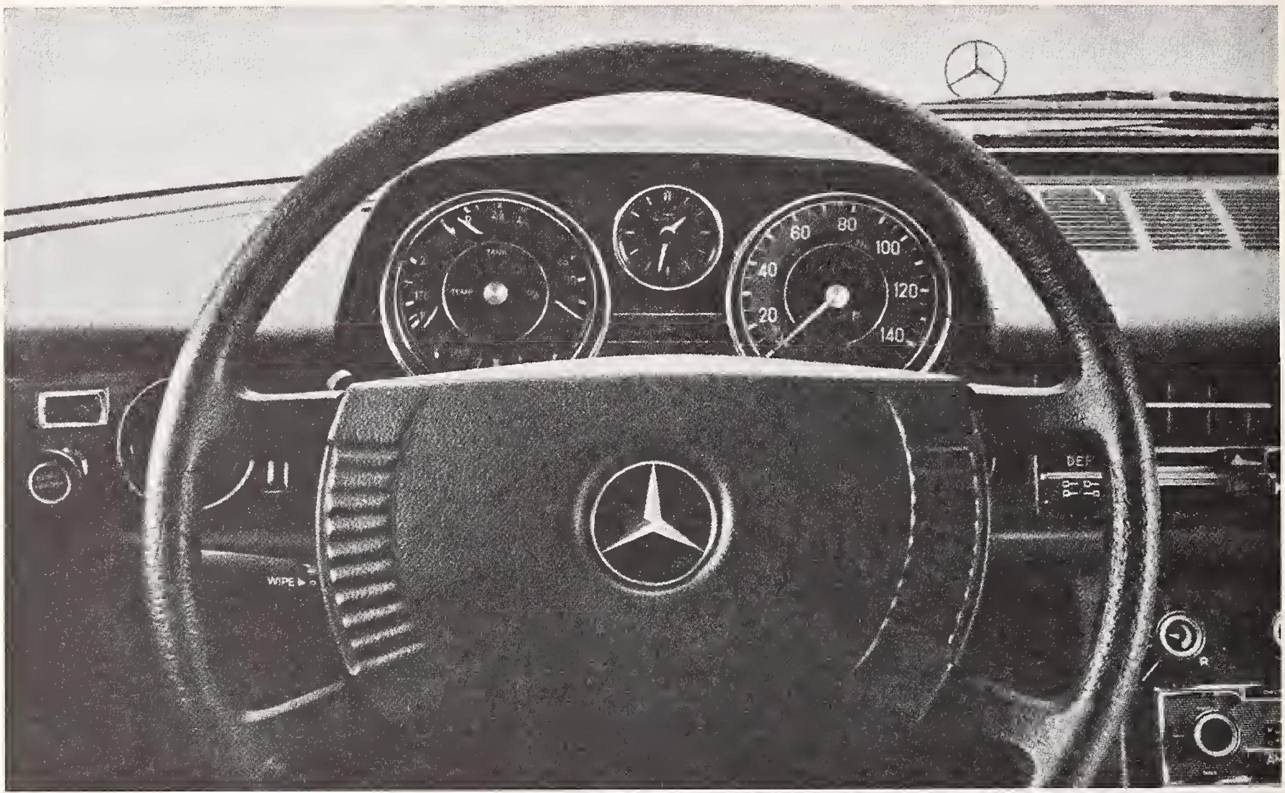

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Abel's Auricle—A Colonial Tale of Plastic Surgery

Marvin S. Arons, M.D., M. Felix Freshwater, M.D. and Richard Hegel, M.A.

> *All good things which exist are the fruits of originality. Liberty consists in doing what one desires.*
> *John Stuart Mill: Liberty, 1859.*

Introduction

The year 1976 represents the Bicentennial of our country. A question we might ask is, "What was the state of medicine and plastic surgery two hundred years ago when our country was founded?" (Figs. 1 & 2). Anesthesia was unknown, asepsis was unknown, and plastic surgery as we know it today was virtually unrecognizable. It would not be until forty years after the signing of the Declaration of Independence that plastic surgery would appear in a recognizable form, for it would not be until 1816 that Joseph Constantine Carpue would publish his monumental work on rhinoplasty (Fig. 3) which would lead to the renaissance of plastic surgery and to the development of plastic surgery as we know it today.[1]

Figure 1

Dr. Philomen Tracy. Portrait of a Massachusetts physician—1780—Edgar & Bernice Chrysler Garbisch Collection, National Gallery of Art, Washington, D.C.

Figure 2

Dr. William Glysson—Woodstock, Connecticut physician—1785—painted by Winthrop Chandler. O.L. Bettmann: *A Pictorial History of Medicine*, Charles C. Thomas, Springfield, Illinois, 1956.

It is true that there were occasional plastic procedures in Colonial America at the time of the Revolution. For example, hare-lip repair (Fig. 4) was performed by the pin method by itinerant surgeons and dentists.[2] Nevertheless, nothing revolutionary was accomplished in plastic surgery at the time of the Revolutionary War. Plastic procedures then described were virtually unchanged from those mentioned by Ambrose Pare, one of the great surgical figures of the Renaissance period. Because plastic surgery was relatively dormant in terms of its later evolution, we must examine the effect of plastic surgery two hundred years ago on individual patients and postulate if they benefited from plastic surgery by being able to contribute more to society with it than without it. As part of the Bicentennial celebration, we report an individual case in which plastic surgery was utilized in colonial times to rehabilitate a youthful Connecticut offender. Subsequently, this patient contributed not only to the revolutionary effort, but also to many remarkable technological advances in the late eighteenth century.

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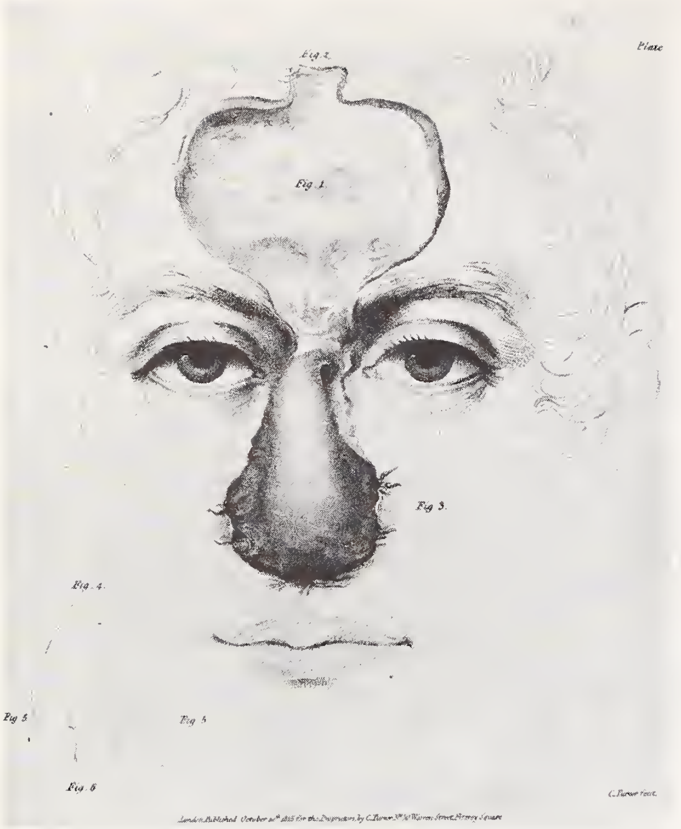


Figure 3
Reconstructive Rhinoplasty. Joseph C. Carpue (1764-1846)—Longman, London, 1816.

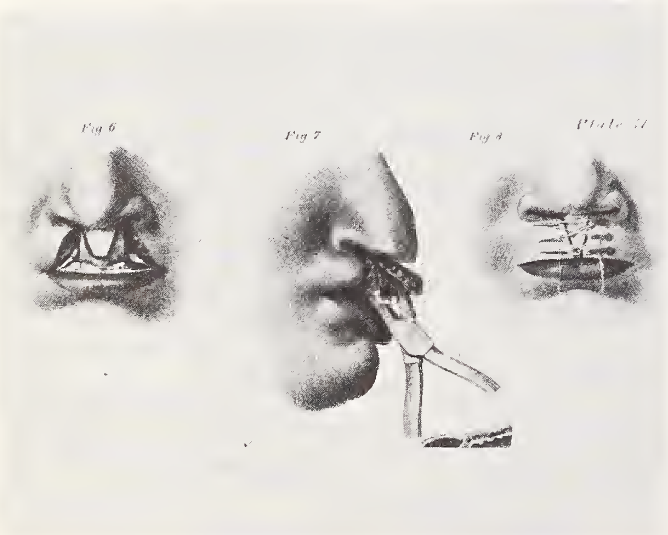


Figure 4
Bilateral cleft lip repair. Joseph Pancoast (1805-1882) *A Treatise On Operative Surgery*. Carey & Hart, Philadelphia, 1844.

Early Days

Abel Buell was born in Killingworth, Connecticut in 1742. He was an apprentice silversmith for Ebenezer Chittendon of East Guilford, Connecticut. Little is known of his childhood, but in 1763 he was arrested for counterfeiting Connecticut money by changing five shilling notes to five pound notes.[3] A trial was held in Norwich Superior Court, and Buell was sentenced to be branded on the forehead with a C (the letter designating his crime—counterfeiting), to have his right ear cropped off, to have all his property confiscated, and to be imprisoned for life.[4] Either because of his youth or his recognized potential, the King's counsel granted him every possible indulgence. Accordingly, he was branded on the forehead *as high as possible* with a hot iron in the form of a letter C. "The tip only of Buell's ear was cropped off. It was held on his tongue to keep it warm until it was put on the ear again where it grew on"[4] (Figs. 5 & 6). Thus was recorded an early American attempt at rehabilitation of a criminal by plastic surgery. Was this successful—not aesthetically—but in relation to Buell's subsequent contributions to society?[5]

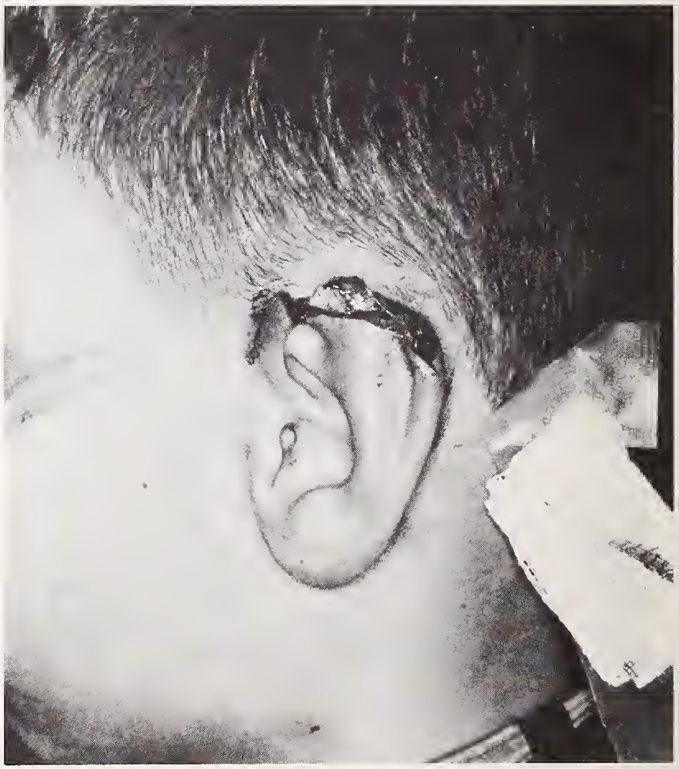


Figure 5
Young contemporary patient whose ear was "cropped" by a German shepherd dog.

Revolutionary Accomplishments

Soon after his incarceration, Buell petitioned the Connecticut General Assembly in 1763 for release from prison on grounds that he was penniless, ill, about to die, and that he had discovered a new method of grinding and polishing stones "by which discovery saving and advantage will accrue to this Colony".[6] Buell's petition was granted, and he was paroled on bond raised by his family and friends with the condition that he not leave Killingworth. After three years, Buell was pardoned by the General Assembly[7] and soon began his brilliant career. His pardon may have been helped by the fact that in 1764 he became a

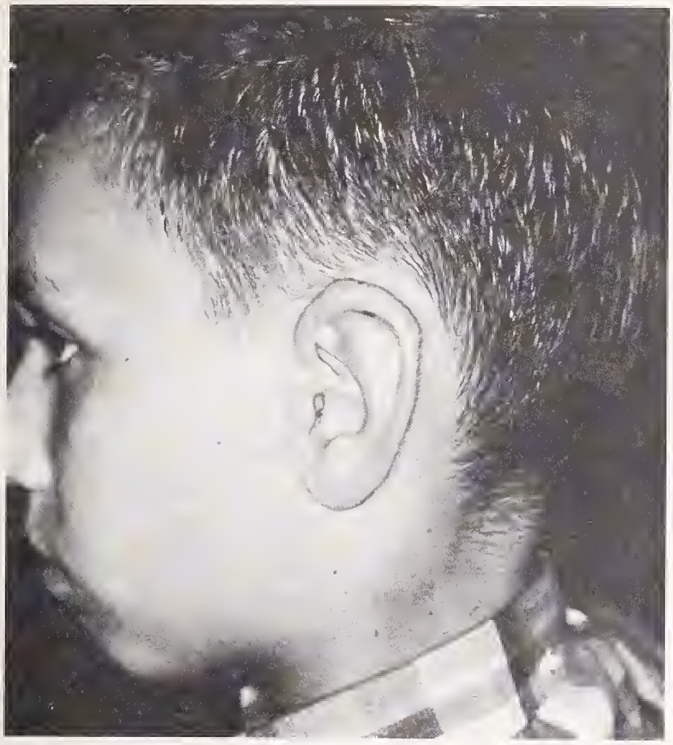


Figure 6
Same patient one year after reconstruction.

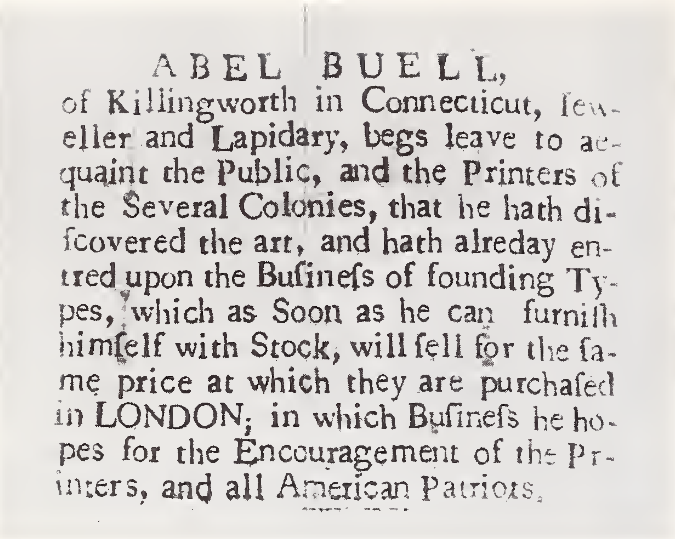
member of the "Sons of Liberty",[3] a secret organization in the colonies dedicated to fighting the Stamp Act. A fellow silversmith and engraver—Paul Revere (Fig.7)—was also a member of this organization, along with Dr. Joseph Warren of Boston[8] (Fig. 8).

Figure 7
Paul Revere, II (1735-1818). Portrait by John Singleton Copley. Museum of Fine Arts, Boston. (The famous Massachusetts version of Connecticut's Abel Buell).

Figure 8
Dr. Joseph Warren (1741-1775). Massachusetts Historical Society, Boston.

In 1767, Buell had advertised in Boston newspapers as a "Jeweler and Lapidau" since he had invented a machine for grinding and polishing precious stones.[9] About 1770, he moved to New Haven to open a silversmith store at "the Sign of the Coffeepot"[10] across from the Yale campus. The silver seal of the City of New Haven was made by Buell,[11] and he was commissioned by a local church to manufacture silver chalices.[12] Not only did Buell excel in working with jewels and precious metals, but he also gained recognition as a printer, and engraver, being the earliest Connecticut copper engraver.[13] In 1768, he became the first in the colonies to use and cast type,[14] repeating in provincial eighteenth century America what Gutenberg accomplished three centuries earlier in Europe (Fig. 9). In 1769, he petitioned the Connecticut General Assembly for financial aid in establishing a type cast foundry in New Haven. The Assembly loaned him money to establish—in 1770—the first metal printer's type manufacturing facility in the colonies.[14] Buell also engraved the first diploma forms for Yale University[5] and the first bookplates for the Yale Library.[13]

Despite his artistic success as a silversmith and engraver, Buell was a financial failure because he was unable to meet the debt contracted in his cast typing venture, and, therefore, fled New Haven in 1770 to avoid imprisonment. After the debt suits were dismissed, he returned in 1775 and was commissioned



ABEL BUELL,
of Killingworth in Connecticut, Jeweller and Lapidary, begs leave to acquaint the Public, and the Printers of the Several Colonies, that he hath diſcovered the art, and hath alreday entred upon the Buſineſs of founding Types, which as Soon as he can furniſh himſelf with Stock, will ſell for the ſame price at which they are purchaſed in LONDON; in which Buſineſs he hopes for the Encouragement of the Printers, and all American Patriots.

Figure 9

In 1768, Abel Buell advertised as the first in the Colonies to use and cast type.

by Governor Trumbull of Connecticut to outfit privateers in New Haven harbor to prey on British shipping.[15] It must be assumed that Buell's charisma continued to create confidence and attract the interest of the Connecticut "establishment", such as President Ezra Stiles of Yale.

Abel the Entrepreneur

Buell was one of the first entrepreneurs to be spawned in the colonies. In 1784, he advertised that he "has on exhibition the wonderful Negro who is turning white." He even managed to have Timothy Dwight, President of Yale, authenticate this probable case of vitiligo[16] rather than Dr. Hezekiah Beardsley of New Haven (Fig. 10). Clergymen and teachers were held in higher regard than physicians.

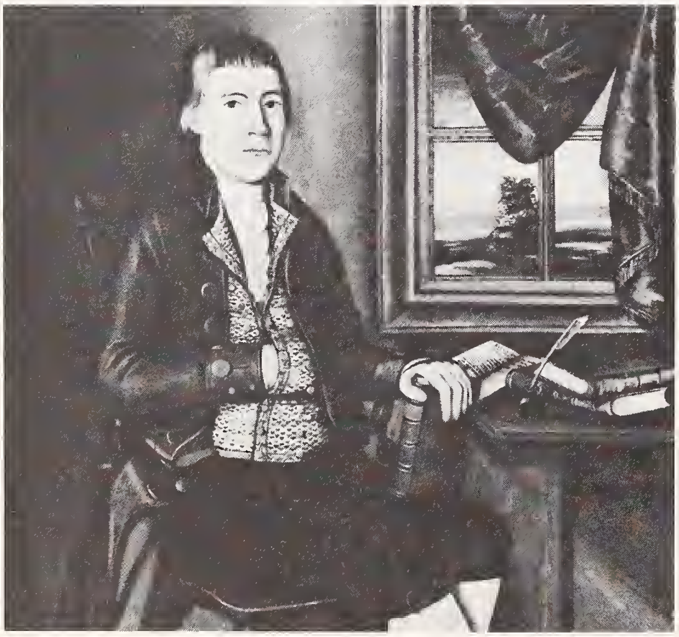


Figure 10

Dr. Hezekiah Beardsley of New Haven. Yale University Art Gallery, New Haven.

With the aid of Amos Doolittle (another famous Connecticut engraver, silversmith, and clockmaker), Abel Buell, the former counterfeiter, engraved the first money for the New Haven Bank.[17] In 1784, the year of the signing of the Constitution, he advertised a large wall map of the United States as "the first engraved by one man in America."[16] In 1785, Buell invented a minting machine capable of stamping one hundred and twenty discs a minute, and with this machine he minted Connecticut's first money,[18] called Connecticut "coppers". Thus, Buell introduced mass production into the United States while his fellow New Havener and friend, Eli Whitney, was establishing the concept of interchangeable parts in his factory. After Buell had erected the first cotton factory in the United States in 1795 with machines he had smuggled out of England, Eli Whitney asked him for an affidavit attesting to the effectiveness of his cotton gin.[19]

Unfortunately, Buell also manufactured some unauthorized New York coins and hastily departed from New Haven again, not returning until 1795. He had journeyed to England to learn about machinery used in cloth manufacturing, and while there he helped design and construct one of the earliest iron bridges.[4] Between 1795 and 1800, Buell turned his productive mind to other fields and invented a machine for planting corn and onions.[19] He also found time to design the locks for the New Haven-Farmington Canal Company.[20]

Later Days

At the turn of the nineteenth century, Buell moved to Hartford and then to Stockbridge, Massachusetts where he dabbled in religious theories and cults for a pastime. By then, he had married four wives during a "lifetime filled with both dreams and projects."[21] He also was described as a "rolling stone that gathered no moss."[16] He returned to New Haven (Fig. 11), a pauper, and died in September, 1822. His obituary read: "At the Alms House in this town on the 10th, Mr. Abel Buell, aged 81 years, an ingenious mechanic."[22]

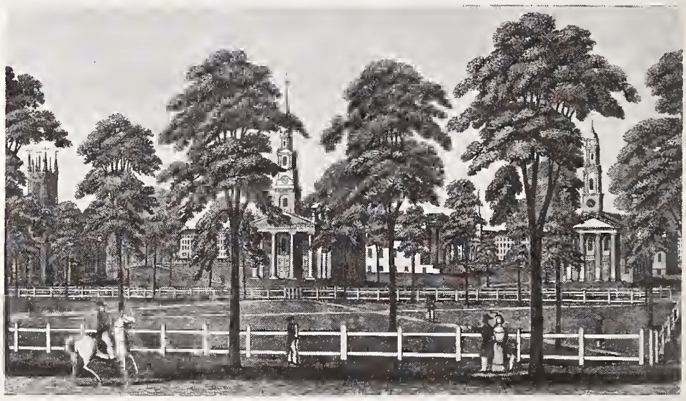


Figure 11

Eastern View of the Public Square or Green, in New Haven, Connecticut. Engraved and Printed in New Haven by John Warner Barber—1840. Yale University Library.

Conclusion

The use of plastic surgery in the rehabilitation of criminals has yielded equivocal results in modern times.[23-26] A recent pilot study demonstrated no difference in behavioral and psychological parameters between juvenile delinquents undergoing plastic surgery and those on whom no surgery was performed.[27] Nevertheless, this study recommended that decisions regarding plastic surgical intervention be based upon evaluation of the individual case.

We believe this pre-revolutionary attempt at rehabilitating a Connecticut convict with "plastic surgery" was successful. Although his scruples may have varied from time to time, his achievements and contributions to the revolutionary cause and to early American life are firmly engraved in American history.

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Designated official project of The New Haven Bicentennial Commission, 157 Church Street, New Haven, CT 06510.

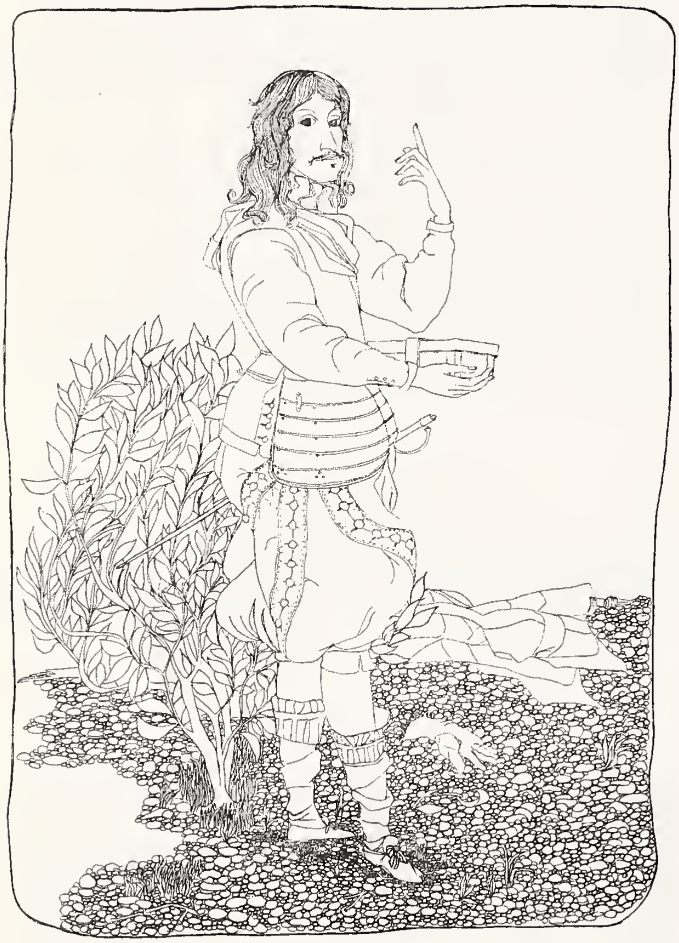
The New Haven County Medical Society was formed in 1784, and in 1788 published "Cases and Observations; by the Medical Society of New Haven County", the first volume of transactions published by a medical society in the United States. The publication committee was composed of Leverett Hubbard, Eneas Munson, Ebenezer Beardsley, Samuel Nesbit, and Samuel Darling. The printer was J. Meigs, who later became president of the University of Georgia.

The secretary of the society, Samuel Darling, wrote a preface in which he refers to America as "an infant empire, where the seeds of science, though widely disseminated, are just beginning to germinate."

Connecticut's First Surgeon: Thomas Pell

Melville Roberts, M.D.

Authenticating historical "fact" is frequently difficult. Determining who was the first surgeon in Connecticut is probably impossible because of the inadequacy of the colony's early records. There is no doubt, however, that Thomas Pell was the first surgeon noted in the earliest records of what now is the State of Connecticut.



Thomas Pell

(Drawing by Thom Lafferty from an original by an unknown artist)

Figure 1

(Reproduced through the kindness of Anthony D. Pell and Mrs. R. T. Pell)

Thomas Pell was born in Southwyck, Sussex in 1613. His father, John Pell, a graduate of Jesus College, Cambridge was a scholar and schoolmaster. His mother was Mary Holland, a cousin of the Earl of Holland, coutier to Charles I. Mary Holland Pell died a year or two after the birth of Thomas. Thomas and his older brother John were orphaned when their father died shortly after their mother. The two boys were then raised by their stepmother Joanne Gravett Pell. Thomas' brother John eventually became Professor of Mathematics at Oxford and ambassador to the Swiss Cantons during the reign of Oliver Cromwell. Thomas also had a sister, Bathsua, who was tutoress to Charles I daughter, Princess Elizabeth. The Dictionary of National Biography referred to Bathsua as "the most learned Englishwoman of her time."

Thomas attended the Free School at Steyning and at age 13 entered Magdalene College, Cambridge. In 1628, after two years at Cambridge, Thomas went to London where his mother's cousin, Lord Holland, arranged for him to enter the service of Charles I as a page. During the next year Thomas apparently tired of his duties as a page. He left the Court and joined Sir Horace Vere's Corps to fight in Holland where he was commissioned an ensign.

He was promoted to lieutenant after the siege of Maastricht in 1632. It has been suggested that Thomas learned surgery during his military service in Holland.[1] There is no record of his medical training.[2] He was never listed as a member of the Worshipful Company of Barber Surgeons in London.

Where Pell went immediately following the fighting in Holland and what he did is a mystery. One family chronicler alleges that on April 5, 1635 Thomas Pell, aged 22, booked passage for New England on the ship "Planter" accompanied by Marie Pell, aged 26, and Marie Pell, aged one. Who the two Maries were and what happened to them is not known.[3] There is no record of Pell having married before his arrival in the colonies. Another Pell family historian speculates that Thomas landed in Boston in 1635 after making the crossing with John Winthrop, Jr., son of Governor Winthrop of Massachusetts Bay Colony.[1] There are no shipping records to substantiate this claim, however.

It is known for certain that Thomas Pell served as a Lieutenant Surgeon with Captain David Lion Gardiner at Fort Saybrook in 1635.[4] This is clearly shown in the early records of the Saybrook Colony. Because of this it has been speculated that Thomas Pell was Connecticut's first physician and surgeon.[5,6]

During the bloody fighting with the Pequot Indians at Fort Saybrook in 1637 and 1638, "Chirurgeon" Pell was mentioned frequently in reports by both Captain Gardiner and Captain John Underhill. As the only

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surgeon, Pell must have been kept busy. During one battle three-quarters of the English force was killed or wounded by the Pequots. The Pequots were particularly vicious fighters. In one attack they swept down on a group of settlers loading hay, carried off a man named Mitchell and roasted him. The English eventually triumphed over the Pequots, driving them south into the swamps of Fairfield and finally west out of the territory completely.

After the Pequot wars Pell settled in Fairfield where he owned considerable land.[7] He also practiced medicine in New Haven and is mentioned in the record of the town meeting there on January 29, 1660.[8] Pell is best known for his purchase of a large tract of land (9,160 acres) in what is now Westchester County, New York.[9] He purchased the land from the Indians who had earlier sold it to the Dutch. The Dutch were understandably upset and on April 22, 1655 Peter Stuyvesant sent Pell a letter stating: "... I notify and make known to you, and all whom it may concern, that you and your associates have, not only settled on the lands aforesaid, which were, many years ago purchased by the Dutch nation and taken possession of by deeds from General Kiest of blessed memory, but by usurpation, in violation of the Treaty of Hartford ..." He gave Pell 15 days to vacate. Pell did not give up the land and the Dutch were too weak to force him out. At a session of the General Assembly in Hartford, May 10, 1663 Pell was given official sanction to hold the land. In addition, the Duke of York granted Pell the land as an enfranchised township and manor. Thomas Pell thus became the first Lord of the Manor of what is now Pelham and New Rochelle, New York.

Pell maintained his place of residence in Fairfield. It was there that he died after a short illness in September, 1669. Up to the time of his illness he had been supervising the building of a manor house in Pelham. From 1665 until his death he served prominently as Deputy for Fairfield in the General Assembly in Hartford. His surgical instruments were listed in his will.

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The Medical Log of *Old Ironsides*

H. Benjamin Bradburn, M.D.

U. S. S. Constitution, Isaac Hull, Esq.
Commanding, William Bainbridge, Esq.
Commanding, Amos A. Evans, Surgeon,
March 16, 1812, March 5, 1813.

Amos A. Evans was 27 years old when he came on board the *U. S. S. Constitution* in Washington Navy Yard, March 25, 1812. He had studied medicine in Philadelphia with Dr. Benjamin Rush and other physicians and he had been appointed surgeon's mate in the Navy 9/1/1808. He was sent to duty thereafter to the Marine Hospital in New Orleans. In early 1812 he was ordered to St. Mary's, Georgia, but was shipwrecked en route and made his way overland to Washington where he was ordered to the *U. S. Frigate Constitution* lying at the Washington Navy Yard being refrigerated in anticipation with the coming war with England. Dr. Evans served a year sea duty from March 1812 to March 1813 on board the U. S. S. Constitution and was then transferred to the Charleston Navy Yard in Boston, during 1813 and 1814 where he obtained or completed his M. D. degree from the Medical School at Harvard College. He then served as surgeon on the U.S. ship "Independence," a 74-gun line of battleship. Thereafter, he returned to inactive duty and private practice in Elkton, Maryland, resigned his commission in the Navy in 1824, and continued to practice in Elkton until he died at the age of 63 in 1848.

Dr. Evans' position in the Navy at that time was defined in Navy regulations which were written in 1802 and revised only slightly in 1809. These Navy regulations are generally similar to those of the English Navy and the duties of a surgeon are outlined as follows:

"Of The Duties of A Surgeon"

1. To inspect and take care of the necessaries sent on board for the use of the sick men; if not good, he must acquaint the captain; and he must see that they are duly served out for the relief of the sick.

2. To visit the men under his care twice a day, or oftener, if circumstances require it; he must see that his mates do their duty, so that none want due attendance and relief.

3. In cases that are difficult he is to advise with the surgeons of the squadron.

4. To inform the captain daily of the state of his patients.

5. When the sick are ordered to the hospitals, he is to send with them to the surgeons, an account of the time and manner of their being taken ill, and how they have been treated.

6. But none are to be sent to sick quarters, unless their distempers, or the number of the sick on board, are such, that they cannot be taken due care of; and this the surgeon is to certify under his hand, before removal. If the surgeon of the hospital finds they might have been cured in a little time on board, the surgeon of the ship is to have charged against his wages for every man so sent, ten dollars.

7. To be ready with his mates and assistants in an engagement, having all things at hand necessary for stopping of blood and dressing of wounds.

8. To keep a day-book of his practice, containing the names of his patients, their hurts, distempers, when taken ill, when recovered, removal, death, prescriptions, and method of treatment, while under cure.

9. From the last book he is to form two journals, one containing his physical, and the other his chirurgical practice; which are to be sent to the navy office, at the end of every voyage.

10. Stores for the medical department are to be furnished upon his requisition, and he will be held responsible for the expenditure thereof.

11. He will keep a regular account of his receipts and expenditures of such stores, and transmit an account thereof to the accountant of the Navy, at the end of every cruise.

The daily log which Dr. Evans was required to keep exists today in manuscript form, and we are fortunate that he also kept a journal which gives us an intimate account of the daily life of early 19th century surgeon during the greatest days of the American sailing Navy.

The *U. S. S. Constitution* was authorized as part of a bill signed by President Washington to create a permanent American Navy. The bill was signed in 1794 and the construction of the six frigates, among those the *U. S. S. Constitution,* began in Edmund Hartt's shipyard across Boston Harbour from her present birth at the Charleston Navy Yard. She was launched in 1797. It is interesting to note that her copper and hardware were furnished by Paul Revere from his foundry not far to the south of Boston. Following her launching the *U. S. S. Constitution's* career in the Navy consisted of active participation in the Quasi War with France in 1798 and she particularly distinguished herself in the Algerian War

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DR. H. BENJAMIN BRADBURN, Assistant Clinical Professor of Orthopedics, Yale University School of Medicine.

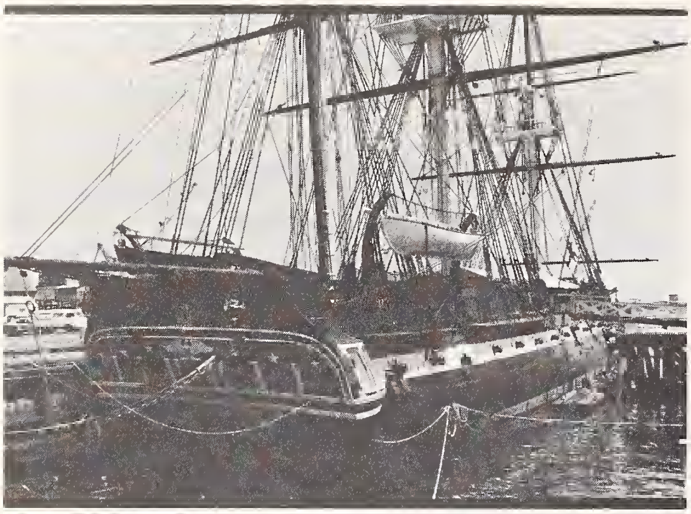


Figure 1

U.S.S. Constitution as seen at her berth at Charleston Navy Yard in Boston, July 1976.

in 1803. Peace was signed with the Day of Algiers on board the *U. S. S. Constitution* in 1805 and she remained in the Mediterranean Squadron to protect this peace and defend American interest from the Barbary pirates until 1807. From her decks Lt. Presley O'Bannon took a detail of Marines ashore and first raised the flag on the shores of Tripoli and captured the fortification at Derne, April 26, 1805. Following her return from the Mediterranean the ship was laid up in ordinary in the New York Navy Yard, thence taken to Washington Navy Yard in 1812 to be readied for the coming war with Great Britain.

Dr. Evans' daybook starts March 1812 when he came on board the *U. S. S. Constitution* and continues through March 1813. The personal journal we have access to starts in July 1812 and continues through February 1813. This journal describes the battles of the *U. S. S. Constitution* and the beginnings of the U. S. Navy. Dr. Evans' personality shines through his journal in the somewhat unfamiliar prose of the day. His patriotism, humanity, civic interest and interest in the opposite sex are noted in the following excerpts while on leave in Boston in July 1812.

"Spent the evening at viewing the town which much surpasses in gaiety and beauty my conception of it. The 'Mal' is a pleasant and fashionable extensive walk, planted with Elm trees. The State House is situated on an eminence in the N. W. part of the town, and is a stupendous and elegant building. The streets of Boston are narrow and crooked, but well paved and clean. The houses have an air of neatness about them that in my opinion much surpasses Philadelphia or Baltimore."

"I slept last night at the exchange in the room No. 190 something, and after breakfast this morning took a hack and after driving around town went out thro' Cambridge, and having viewed the college passed on as far as 'Fresh pond tavern,' a house so-called delightfully situated on the bank of a small lake or pond about 5 or 6 miles W. of Boston. After staying some little time there I returned along the foot of 'Bunker's Hill' thro' Charlestown, and stopped at the Navy yard. The country along which I passed is well cultivated and lined with countryseats and farm houses, generally two stories, framed, and handsomely painted, with elegant gardens and yards ornamented with a variety of flowers, shrubs, and trees, amongst the latter English poplar, elm, and English walnut are the most common."

"Will the United States receive any assistance from the eastern states in the prosecution of the present war? Judging from present symptoms, I fear not. Good God! Is it possible that the people of the U. S. enjoying the blessings of freedom under the only republican government on earth, have not virtue enough to support it! Well might Horace say—'all men are mad.' If Democritus or Heraclitus were alive at the present day, our follies would burst the sides of the one and exhaust the tears of the other. 'Quem deus vult perdere, prius dementat.' May heaven forbid that the proverb should ever suit us . . .

"We receive accounts that the British squadron are burning and destroying our merchantment on the coast. The people of this place say they did not expect anything of that kind—are sorry that the British should imitate Bonaparte in anything. Will not this serve to rouse them in some degree? Why do the merchants blame our government for this?

"Judging of the females of this place from their appearance in the street, the only opportunity I have of seeing them, I should say they were not so handsome as those in Philadelphia and Baltimore. Their persons are not so neat nor their motions so graceful. Their complexions are rosy and healthy, and their countenances, features, sprightly and animated: or, in other words, they appear to have more mind and less grace than the Southern ladies. I know nothing of their dispositions, but, if permitted to apply the rules of Lavater to their Physiognomies should say there was a superabundance of Tartaric acid in them. The Yankees, however, I have always understood, are a set of stiff-necked, stubborn republicans, and, of course, not likely to submit to the most tyrannical of all governments, I mean a Petticoat one . . ."

The most memorable exploits of the *U. S. S. Constitution* during the War of 1812, and indeed during any of her history, occurred during Dr. Evans tour of duty under Isaac Hull commanding and later under William Bainbridge. The first tour was just after leaving the Washington Navy Yard on the first cruise of the War of 1812. When just off the coast of New Jersey she sighted a British squadron consisting of the three 38 gun frigates, *Shannon, Guerriere, Belvidera, Aeolus 32,* and the ship *Africa 64.* Very light fitful breezes occurred, and finally a flat calm. The *U. S. S. Constitution* used kedge anchors and the ship's cutter to row the ship out of gunshot ranges. The chase lasted three days and is described by Dr. Evans in his journal. The following excerpt describes the final day:

"July 19th - At 1/4 past 4 A.M. hauled up to S.E. by S. 4 Sail in sight astern, the weathermost ship bearing N.W. 1/2 W., the 2nd N.W., & the others N.W. by N.; all of them hull down. At 1/2 past 6 A.M. more moderate-employed wetting the sails aloft: at 8 A.M. moderate breezes and pleasant: 4 ships still in sight chasing us. The weather-most ship bearing N.W. 1/4 N. having her lower yeards under: & the leeward ship N. by W. At 1/2 past 8 A.M. all the ships in chase stood to the Northward & Eastward & were completely out of sight in a few minutes. Thus terminated a disagreeable chase of nearly 3 days,—attended with inexpressible anxiety and alternate elevation and depression of spirits as the winds were propitious or otherwise. We had many times given over all expectations of making our escape, & had it not been for uncommon exertion we must inevitably have fallen a prey to the superiority of our enemy."

During this period of time the daily log of sick call contains a notation "Have been at quarters since the evening of the 16th being chased by a British squadron of 7 sails. I have not been able to prescribe on a regular way, and have occasionally given the most sick anything that became necessary."

Following this chase the ship went to the Boston Navy Yard for repairs and then left August 2nd for a cruise in the North Atlantic. During this cruise on August 19th she met and defeated the Guerriere in an engagement in which she earned the name of *Old Ironsides.* Dr. Evans described the actions as follows: "August 19th, Wednesday. Cloudy and foggy. Course S & W. Wind N. by E. Lat. observed 41° 42′ N. Long. by D.R. 55° W. At 2 P.M. discovered a large sail to Leeward. Made sail and stood down for her. At 4 discovered her to be a large frigate. When we were within about 2 or 2½ miles she hoisted English colours and fired a Gun. We stood towards her with reefed topsails without shewing our colours. She then commenced firing, and gave us several broadsides without much effect before we commenced firing. She kept wearing several times with a view probably of trying to get the weather gauge of us, which we avoided by wearing also. We hoisted our colours and fired the first gun about 15 minutes past 5 o'clock P.M., but did not come into close action until about 6 o'clock, and after 25 minutes from the time we were closely engaged she struck, having previously lost all three of her masts and Bowsprit. Her hull was much injured. Several of her guns were dismounted otherwise rendered useless on the gun deck by our shot. She had 15 men killed and 62 wounded, most of them very dangerously, immense mischief and destruction having been done by our grape & canister shot. We had

Killed:

Wm. S. Bush, 1st. Lt. Marines; and Seamen, Jacob Sago, John Brown, Caleb Smith, James Ashford, Robert Brice, James Reed.

Wounded:

Charles Morris, 1st Lt., Dangerously;
J.C. Aylwin, Master, slightly;
Richard Dunn, Seaman, Dangerously;
Daniel Lewis, do. do.; Taylor, do. slightly;
Mullen, Marine do.; Geo. Reynolds, Seaman, do.

Beside 4 to 5 others so slightly as not to be disabled from coming to Quarters.

"During the engagement she came against our stern with her bows twice, and carried away her Jib boom and injured our Taffrail. It was when in that situation that Lt. Morris and Lt. Bush were shot. Mr. Morris first jumped on the Taffrail with an intention of boarding her and was instantly wounded in the parietes of the abdomen. Mr. Bush jumped into his place the instant he fell and immediately one musket shot entered his face and passed to his brain. Little or no other injury was done us at that time, and her quarter deck and forecastle were completely swept. Her Second Lieutenant was killed, and the Captain, 1st Lt., Sailing master, and one of the Master's mates wounded. She hoisted 3 or 4 flags at the commencement of the action, and struck immediately after she got clear of our stern. Her foremast and mainmast and mizzenmast fell about the time she was in contact with us. After she struck the Capt. Is. Rd. Dacres Esq. came on board and informed us that it was His Britannick Majesty's ship La Guerriere. We sent Lt. Reed on board and finding the ship in a situation that was considered dangerous to attempt getting in, we were employed all night getting the men and crew from on board. She mounted 49 Guns and had about 260 to 300 men, having sent previously part of her crew in prizes. Capt. Dacres is a pleasant agreeable young man, 24 years of age.

"Our crew behaved very nobly. They fought like heroes, and gave three cheers when the colours were hoisted. They also cheered when each of her masts

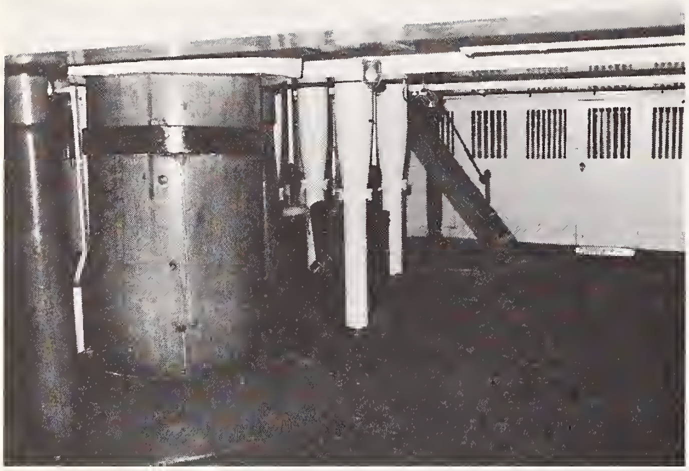


Figure 2
Surgeon's quarters—this was a cubicle behind the grill work on right.

went over the side, and when her colours were struck. Whilst she was on our stern one of her forward guns was run nearly into our Cabin window and fired, but did (fortunately) little or no execution. A shot that entered our after port on the starboard side of the gun deck killed 2 men at the after Gun and wounded one. From the firing of the first gun to the close of the action was one hour & ten minutes. The Guerriere had 15 killed and 62 wounded."

The injured and wounded were described in the daily log book. "Action with the Guerriere on August 20,

"Richard Dunn, had a severe compound fracture of the tibia above the ankle and extensive wound of the muscles by grape shot or langrage. Amputated it below the knee today.

"George Reynolds, received a contused wound below the patella and a contusion above the knee by a recoil of shot from the mainmast in the action yesterday evening. Dressed it with simple Cerate and applied cataplasm and Solut. Acetplumbi and acet. acid.

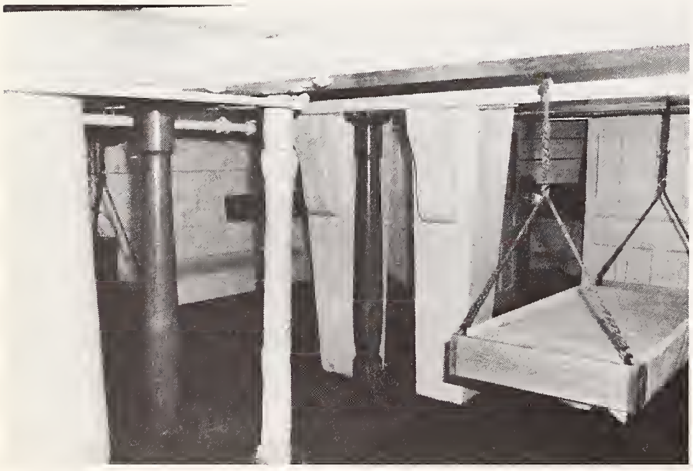


Figure 3
Sick bay forward end of berth deck.

"Mullen (a Marine), a musketball passed through the gastrocnemius above the tendoachilles. Dressed with simple Cerate and applied cataplasm.

"John Craig, a light contusion below the knee from a splinter, applied simple dressing.

"Daniel Lewis, received a blow on the osfrontalis near the squamus suture which produced considerable concussion of the brain. The blood issued from one of his ears. The wound in the scalp was trifling and no appearance of depression or fracture externally. He also received a musketball in the arm. The wound in the arm was dressed with simple Cerate and cataplasm. He was bled freely and took sulfate magnesium ounces 1. He complained of considerable pain in the head and nausea. No other symptoms or complaints at present.

"Taylor, received a musketball just behind the joint of the left shoulder which passed this about part of the deltoid under the trapezius and came out near the spine, nearly on horizontal line with its entrance. It re-entered on the opposite side and going a few inches further again penetrated through the integument. He experienced great pain and considerable difficulty breathing, expectorated frothy blood in considerable quantity. The wound also on pressure discharged discolored blood mixed with air. Applied simple dressing and cataplasm, bled him freely and gave him Aktradic L.D., cooling drink.

"Lt. Morris, received a musket ball in the abdomen about an inch higher than the umbilicus on the linear similunaris and came out about the superior posterior spinous process of the ilium. Applied a light simple dressing, a wound cataplasm and a warm cataplasm, bled him and gave him sulfate, gave his SS which did not operate, repeated it and gave an enema until a light fecal discharge was produced. Strick antiflogistic treatments, cooling dilutant drinks. Not more pain than might be expected under equal circumstances from a wound in the muscles alone. His stomach retains whatever it is given him and the abdomen is not much swelled or painful.

"Mr. Alwin, (Sailing Master) received a wound above the coracoid process of the scapula from a musketball which did not completely cover it and the muscles. Dressed with simple Cerate, rest of the arm."

Then follow five other patients who had other problems unrelated to the action.

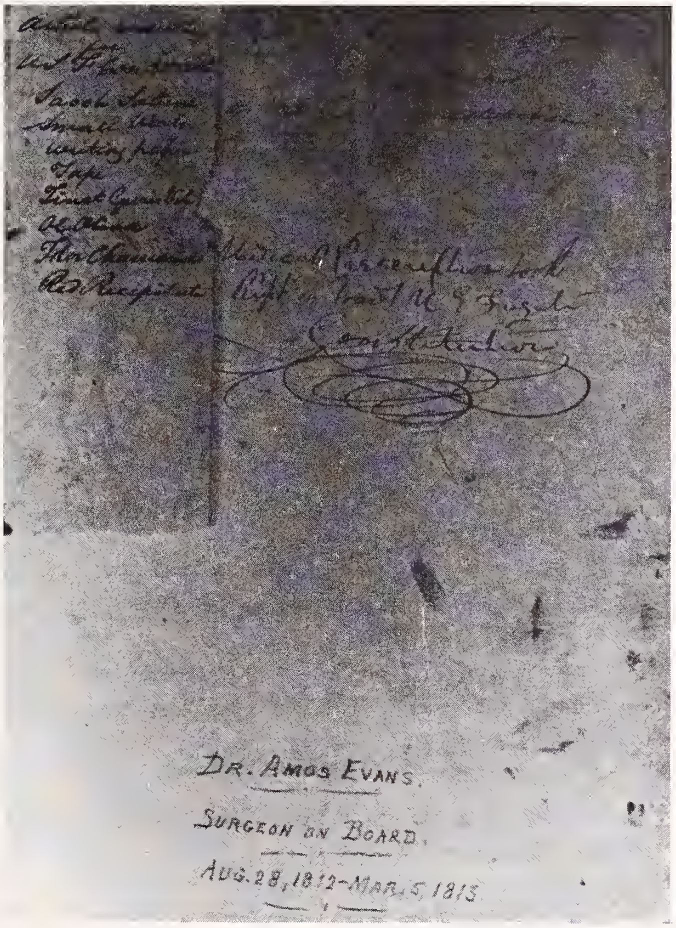
"Date: August 21st & 22nd. patients generally appear to mend. Taylor and Lewis are much relieved, cataplasm to be continued.

"Dunne had some spasms in the abdomen and complains of stinging pain about the stump. Took some of the turns of the roller off and wetted the end of the stump with Laudum, gave Laudum and amount of wine a bit at a time. August 22nd he still complains of cramps at times and suppression of urine, applied warm foamentations to the abdomen and gave a dose of Laudum, passed urine directly after that, pulse is not much excited.

"August 23rd, Mr. Morris, the wound looks well, has not yet commended to discharge. He feels easy and has some appetite but little fever, repeat cataplasms.

"Taylor, pulse regular, skin cool, does not experience much pain except in the neighborhood of the shoulder joint, cataplasms and simple dressings.

"D. Lewis, some pain in the head, sickness of stomach continues. His stomach however, does not reject his food. Pulse is regular, wound of the scalp healed up, arm much better, no discharge. Repeat cataplasms.



DR. AMOS EVANS

SURGEON ON BOARD

AUG. 28, 1812–MAR. 5, 1813

Figure 4
1st page of the 2nd vol. of the daily log.

"Mullen, no discharge from the wound yet, looks well, repeat cataplasm and simple Cerate.

"B. Dunne, experiences considerable pain in the stump, no cramping except when he moves suddenly. Pulse not much excited. Will remove dressings and examine the stump this afternoon.

"Mr. Aylwin, considerable inflammation associated with the occasion and some degree of too free use of the arm and friction of the coat, applied cataplasms.

"Craig, leg much better.

"August 24th, Mr. Morris, wound continues a slight discharge of healthy pus, not much fever or pain, appetite still good. Arrowroot, chicken broth, light diet, etc., repeat dressing and cataplasms, keep bowels open by enema.

"Mr. Aylwin, wound less inflammed, repeat light dressings, and cataplasms.

"Dunne, removed the dressing from the stump yesterday to find the edges were contracted of a healthy appearance, considerable discharge from it, gave a pseudoriffic anodine last night. He rested much better than usual, good appetite, pulse not much excited. Costive, drinks freely of cream of tartar water, dress again this evening or tomorrow morning.

"D. Lewis, some pain in the head, pulse regular, wound of the arm does not discharge, repeat cataplasm.

"Taylor, wound discharged slightly, pulse not feverish, not much pain, repeat dressings, Arrowroot.

"Mullen, slight discharge from the wound otherwise well, repeat cataplasm.

"G. Reynolds, wound discharge healthy pus.

"August 25th & 26th, Mr. Morris being costive, took a small portion of oil of ricine which operated very freely and a copious fecal discharge, gave Laudum, oil of mentholatum minth which settled his stomach and checked the operation of the medicine. His sores discharge and look very healthy, so far very little pain.

"Mr. Aylwin, wound much better, repeat dressing.

"R. Dunne, dreamed last night that he was tumbling in the night before last and turning a somerset out of his cot lite on the deck fortunately no other injuries and opening of some adhesions that had taken place in the stomach and the removal of a dressing. This morning a dressing was again loose probably from restlessness, had but little sleep in the night, complained of much soreness in the stump, takes Dectcinch and wine, Cumb Elixor Vit. in small quantities frequently repeated. The stump discharges rather profusely and the matter is thin but the granulations from the bottom have healthy appearance, repeat medicine, dressings, etc.

"D. Lewis had considerable pain in the head yesterday with inability to retain food on his stomach and a stiffness of the muscles of the jaws. Gave Anodine Pseudoriffic, rubbed jaw with linament Lin. Vol.; pain much relieved this morning, had inclination to drink some chocolate.

"August 27th, Mr. Morris' sores look well, took an enema in the morning which produced a copious discharge of fecal matter, repeat dressings, some small particles of cloth are discharging from the wound in front.

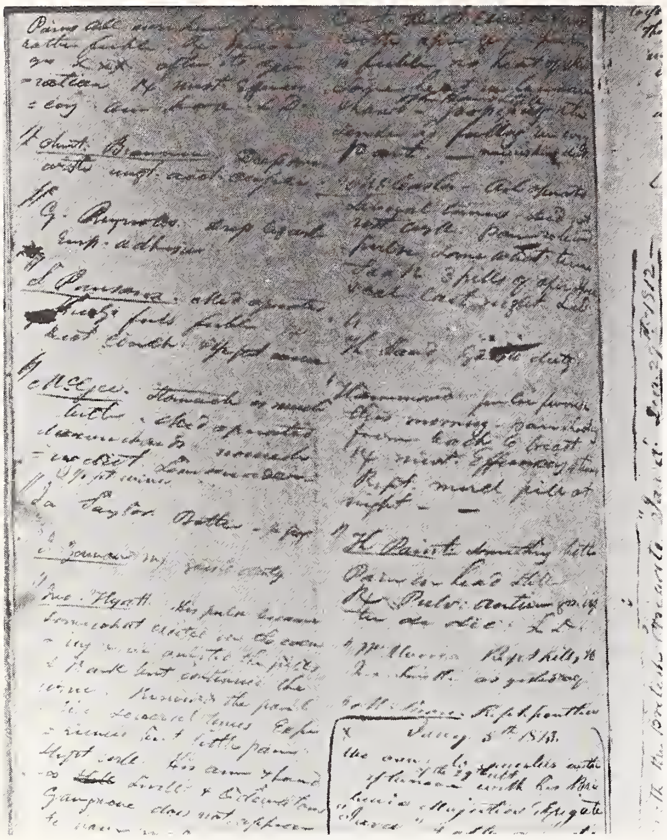


Figure 5

Page of prescription book 5 days after the battle with the "Java". "Jan. 5th 1813, we came to quarters on the afternoon of the 29th with his Britannic Majesty's Frigate "Java" and after an action of two hours succeeded in capturing her. In the engagement we had the following officers wounded. Viz. Commd. Bainbridge, musketball in the thigh.

"Mr. Aylwin, wound is getting better, repeat simple dressing.

"Mr. Dunne, did not sleep any last night, had a slight discharge of indurated feces from the bowel, pulse quiet and other times complains much pain when his wound is dressed and considerable stinging afterwards. The discharge is healthy and the wound has a good appearance, but less union has taken place than could have been expected. The dressings were again loose this morning.

"D. Taylor, the wound looks healthy and continues to discharge, not much pain, pulse regular.

"Lewis, pain nearly removed from the head, appetite good, wound of the arm looks well.

"Mullen, leg better.

"G. Reynolds, simple dressing.

"Mr. Morris, recovered.

"August 28th, 1812, Mr. Morris recovers rapidly. The wound discharged freely, some of the cloth is coming off with it. The sluff of the forewound is good, repeat dressings and give enemas.

"Mr. Aylwin, wound is much better, slight discharge.

"R. Dunne, wound discharges freely and is in good health, did not remove the strip of adhesive plaster this morning, salts operated freely yesterday, took an anodine at bed time which produced some sleep.

"A. Taylor sanguinous discharge from the wound this morning, some pain in the breast at times.

"Daniel Lewis, pain, nicely relieved from his head, wound of the arm looks well with discharge, healthy pus. Repeat simple dressings.

"Mullen, wound looks healthy, repeat cataplasm.

"G. Reynolds, wound is getting better, dressed with light simple Cerate.

"August 29th. R. Dunne, wound looks better, dressed as before.

"Taylor, dressed with cataplasm.

"Lewis, wound of the arm better.

"Mullen, leg much better.

"The U. S. S. Constitution returned to Boston on August 30th, 1812.

"Mr. Morris recovering rapidly.

"Mr. Aylwin, wound much mended, as not to require any further particular attention.

"R. Dunne, stump is healing up, healthy appearance, one of the ligatures is loosening. He complains much of the pain in the stump at times, pulse is good.

"Taylor, wound looks much better, pulse good, took some oil yesterday but did not operate.

"Lewis, had a severe chill yesterday evening, perspired afterwards, had a slight fever this morning but pain in the head is removed, feels stiff and painful, looks healthy and discharges good pus.

"Mullen, leg looks better.

"G. Reynolds, R. Dunne as yesterday.

"Taylor looks much better, repeat dressings had a troublesome cough at night, treated with Elixir of Peragoric.

"Lewis, some irritability of the stomach again, repeat Anodine.

"Mullen, repeat cataplasms.

"G. Reynolds, much better."

After return to Boston and a few days Taylor and Morris' names are not seen again on the daybook without a note as to their disposition being made. It is interesting to note however, that Lt. Morris went on to be made captain on 5th March 1813 in consequence of his bravery and wounds received during the battle with the *Guerriere*. We do not have a record of what happened to Taylor.

The commanding officers of the *U.S.S. Constitution* changed on September 15th, Captain Hull having resigned the command to Captain Bainbridge. Dr. Evans describes that date in the following manner:

"September 15 —To-day Capt. Hull resigned the command of the Constitution to Capt. Bainbridge who hoisted a broad, red pendant. The crew expressed publicly much dissatisfaction at the change, in consequence of which the Armourer was put in confinenment on board the Gun boat for trial. They gave Capt. H. three hearty cheers as he left the ship. The scene altogether was affecting. This whole crew had a great affection for him. They urged him to remain: said they would go out with him and take the Africa: & finally requested to be transferred on board any other vessel. On being asked by Capt. B., who it was that had ever sailed with him & refused to again, several persons spoke—one man said he had sailed with him in the Phila. & had been badly used—that it might be altered now, but he would prefer going with Capt. H., or any of the other commanders. Several others said they had sailed with him before, and did not wish to sail again."

The *Constitution* got underway for a cruise toward South America on October 20, 1812; on December 9th, Dr. Evans describes in his journal a flogging in which a Marine Pershaw received 50 lashes at the gangway as a disciplinary sentence of a court martial held upon him. There is no mention on that day of his having reported to sick call or having been treated for injuries received.

The cruise continued and on December 29th the *Constitution* encountered His Majesty's Ship *Java* off the Brazilian coast within sight of land. While the *Guerriere* was an older ship with not quite as heavy armament as the *Constitution*, the *Java* was a new Frigate whose armament equalled that of the *U.S.S. Constitution* almost pound for pound. The *Java* carried the British Ambassador to India and his staff and was a first class Frigate of His Majesty's Navy.

Dr. Evans described the action as follows:

"December 29, Tuesday. - At 8 A.M. discovered two ships to windward of us. At 9 one of them stood along shore, the other towards us. At 10-30 min. within 8 or 9 miles coming up with us. At 11:30 the Commd. supposed the strange sail to be a two decker and made sail away from her: made the private signal of the day which was not answered. The strange sail hoisted a tricoloured signal flag at her main topgallant-mast head & kept it flying a long time. At 12 the sail gaining on us going 10 k. Lat. ob: 13°6'S. Long. by chron. 37°38' W. Hoisted our Ensign & pendant. The strange ship then hoisted an English Ensign at the peak. At 1.25 the strange sail gaining on us discovered her to be a Frigate. At 1.37 took in part of the sail & stood for the enemy, having previously had all clear for action. At 1.45 she bore down intending to rake us which we avoided by wearing. At 4 minutes before 2 P.M. we fired a broadside at her, when she bore up & returned it: she was at that time distant about 1 mile. She was standing bows on but had hauled down her peak with an intention of wearing, when an order was given to the 3rd Division to fire one Gun in order to make her hoist her colours - but the whole broadside was fired without stopping. The action then commenced warmly on both sides. At 3.15 her maintopmast & foremast went over the side. At 4 her mizzenmast went about 10 or 15 feet from the deck. At this time her fire was stopped & we hauled aboard our fore & main tack & stood from her to repair our braces, etc. At 4.25 her mainmast went nearly by the board. The colours still flying at the stump of the mizzen mast. At 4.50 wore & stood for the Enemy. At 5.25 got ahead of her in a raking position & were about giving the order to fire when she struck her colours, at which our crew gave 3 hearty cheers, as they had done when we first beat to quarters & several times during the action. At 6 sent the cutter with Lieut. Parker on board, which returned with the 1st. Lieut. Chadds (the Capt. being mortally wounded) who delivered his sword, together with His Majesty's Ship Java - rated 38 but mounting 47 guns - Henry Lambert Esq. Capt. employed during the night in taking the officers & crew from the Ship. She had about—killed & — wounded. The exact number could not be ascertained. Their own account was — killed & 105 wounded. She had on board Supernumeraries & all were about 450. She was six weeks from England bound to Bombay. On board were Lt. General Hyslop & suite, consisting of Major Walker, & Capt. Wood; a Surgeon's Mate, Lt. of Marines, & 2 Sea-Lts. passengers, together with Capt. Marshall, a master & commander, who all were actively employed during the action.

"On our part there were:

"Killed. - Jonas Angrau, Joseph Adams, Patrick Connor, Barney Hart, John Chevers, Seamen; Mark Snow, Jno D. Allen, Wm. Cooper, Ord. Seamen: Thos. Hanson, Private of Marines.

"Wounded. - Wm. Bainbridge, Commd., Severely; Jno C. Aylwin, Lt. Dangerously; Chs. F. Waldo, M.M., Amptd. Thigh; Lewis German, Midm. Slightly; Peter Woodbury, QrM, Severely; Jno Clements, Seaman, Amptd. Leg; Joseph P. Chevers, Seaman, Ampted. arm; Joseph Ward, Seaman, Amptd. Thigh; Phillip Brimblecomb, Seaman, Amptd. arm; Nich. Wextram, Seaman, Slightly; Wm. Long, Seaman, Dangerously; Stephen Webb, Seaman, Mortally; Reuben Sanderline, Seaman, Mortally; Wm. Weeden, Seaman, Slightly; Enos Bateman, Seaman, Dangerously; Js. D. Hammond, Seaman, Slightly; Peter Furnace, Seaman, Severely; Stephen Sheppards, Seaman, Slightly; Abijah Eddy, Seaman, Slight; Philip Cook, Seaman, Slightly; Saml. Brown, Ord. Seaman, Severely; Danl. Hogan, ord. Seaman, Severely; Th. Williams 3d, Ord. Seaman, Slightly; Jno. Vogel, Ord. Seaman, Severely; Anthony Reeves, private Marines, Slightly; Jno. Elwell, Private Marines, Slightly; Mich. Chesley, Private Marines, slightly.

"A few more men slightly wounded, but not sufficiently so to require particular notice. Employed all night getting the prisoners and baggage on boards."

The daily log book which up to now has been kept in neat double-spaced rather droll entries contains the following laconic notation on January 5th, 1813, five days after the battle:

"We came to quarters on the afternoon of the 29th with his Brittanic Majesty's Frigate "Java" and after an action of two hours succeeded in capturing her. In the engagement we had the following officers wounded. Commd. Bainbridge, musketball in the thigh together with several contusions from splinters, the ball had passed through the biceps flexor curiss a few inches above the knees. We could not discover the direction but suspect that it passed downwards. It presented at first as a splinter wound, dressed with soft pudgets and warm cataplasms. Lt. Aylwin, a grape shot entered in front under the scapular extremity of the clavicle and came out through the scapula doing injury to both bones. It passed through part of the muscles in front of the ______ then passed through the infraspinatous near the spine of the scapula. Applied warm cataplasms, sluffing was frequently removed, his breast and back were discolored considerably by an effsion of blood which had been absorbed.

"Mr. Waldo, Masters Mate had a grape or large musketball pass through the leg about six inches above the ankle entering the soleous and coming out through the flexor longus digitorum pedis fracturing both of the bones. The leg was laid straight on a splint and cataplasms applied. The inflammation and swelling became considerable but the leg was much indurated. The discharge is considerable, but naturally healthy in appearance. The foot is of natural temperature.

"Peter Furnase (s) a large grape shot entered the tibialis anticus rather below the middle of the leg having injured the tibia, lodged beneath the entegament covering the tendoachilles. The ball was extricated by making an incision over it, cataplasms applied. The leg splint has been much swelled for some days but is at present somewhat reduced. Continued warm poltices. He was purged in the first instance and started on an antiflogistic regimen as were most of the other cases.

"William Long (Seaman); a large grape shot entered at the same place as Mr. Aylwin's but above the clavicle and came out through the rhomboideous major and trapezius near the spine. He has not had much lymphatic fever and had generally a good appetite with a healthy pulse. He has taken a light cathartic and wine and bark with a nursing diet, discharges freely, sluff has not yet separated, repeat bark and wine.

"Daniel Hogan, Seaman had his right thumb fractured together with a considerable injury to the arm above it. Some of the fingers were also slightly injured. Dressed the thumb with a view to trying to save it which is at present rather doubtful. The thumb and forefinger are also much shattered as well as considerable injury done to the back of the hand. The left was also dressed, but the forefinger of it will probably have to be removed. The right looks the worst. The sluff separates and granulations have a healthy appearance. Applied soft dressings and warm cataplasms, has taken light cathartics and kept on a low diet.

"Peter Woodbury Qm., the thumb of the left hand was shot off leaving the metacarpal severing many muscles, applied warm poultices, looks well.

"Thomas Williams 3rd, a ball entered the breast over the 3rd rib, glanced off and was cut out near the pectoral muscles. Also received several contused wounds of the face and the wrist, applied cataplasms.

"Samuel Brown was much hurt with gun powder over the breast and arms and face, applied cold water and afterwards cataplasms; is getting repeat oil cloths.

"Enus Bateman was much burnt with gun powder over the side of the face, applied cold water and afterwards lamp oil, repeat light dressings.

"Stephen Webb was burnt over during the action and had his left thumb shot off together with an extensive contused wound of the face, afterwards lamp oil was applied. He died on Saturday last.

"John Elwell received a contused wound over his leg, arm and breast in the action, is at present much better, applied poultices.

"Duncan MacDonald had his ear and head burnt with gun powder, light oil dressings applied.

"Reuben Sanderline, (Seaman) a large grape shot where the left pectoralis major enters it, came out in the armpit (axillary) entered the arm, fractured the bone near the neck and came out in the opposite side through the head of the biceps. It was conceived advisable in this case to attempt a cure. There was no hemorrhage and I thought it more likely to succeed than an operation at the shoulder joint. His arm however, had to be taken off at the part where the bone was broken without any pain, the parts being completely dead, gangrene and mortification had extended further and appeared to have commenced in the pectoral muscles from circumstances deemed it advisable to perform an operation at any rate until the mortification is completely checked. He has suffered much pain and has had considerable fever throughout. The pulse was not palpable at the succeeding day after the injury although it appeared with a slight pulsation when he was first examined. Treated with bark wine and opium frequently.

"Cook (S) received a contused wound above the knee, cataplasms.

"Hichel Chisley received a slight contused injury on the side of the head, light dressings.

"John Nagel (Seaman) was wounded with a langrage on the tibia which was slightly fractured and received a wound which nearly divided the biceps flexor cubiti in the arm about 3 inches above the elbow but the wound became inflammed considerably and has not begun to subside, applied poultices.

"Elijah Eddy received a contused wound on his thigh and another on his leg, applied cataplasms.

"James D. Hammond received a contusion of the rectus femoris which removed part of the muscle, applied cataplasms. He is recovering.

"Nicholas Wextram (S) was considerably burnt on the hand and face and shoulder during the action, applied cold water, afterwards oil. He is fast recovering.

"Anthony Reeves and W. Weider had their face and legs much burned with gun powder in the action, dressed them as did the others, are getting well.

"Anthony Sanders has his thigh lacerated, applied plasters and light dressings.

"John Brannon received a contused wound over the left parietal bone, is well at present.

"James D. Cherry had his arm shot through near the elbow with a ball. We amputated the arm above the elbow as usual. His stump has nearly united, the ligatures in the wound have not yet come away.

"Peter Brimblecomb had his arm shattered at the elbow joint with a ball, was amputated below the insertion of the deltoid muscle. The stump has nearly united the ligatures who in number have not yet separated.

"James Ward, extensive wound of the left leg below the knee with a common ball, amputated the thigh and the stump looks well, suburates a healthy pus freely, dressed, treated with bark wine.

"John Clements (Seaman) had his leg shot off above the ankle. It was considerably lacerated, amputated below the insertion of the ligament of the patella. He complained of considerable pain since the operation and not much fever, treated with cathartic and anodine afterwards on the 4th day secondary hemorrhage came and before it was discovered he had lost a considerable quantity of blood. I immediately opened the stump but notwithstanding every exertion was made by bathing the limb and I could not discern the source from which the hemorrhage proceded nor did it bleed any after the discharge was removed. I then bound up the stump and had been dressed twice since without any hemorrhage. At the dressing yesterday the ligatures, two in number, came out well. His pulse has been quick, jerking and irregular. He has had much pain to relieve which he has had occasionally taken opiates. The discharge from the stump is rather irritating. He has little appetite. During all the operations has been obliged to operate without any warm water. The patient became febrile and we were obliged to wait a considerable time before the vessels would bleed sufficiently to be discovered, every exertion was made to discern another vessel and ligate at the time of the operation. Treated with wine and a nourishing diet.

"Winder, improving gradually. Repeat nourishing diet.

"Hammond has had much pain since the action, is at present better.

"Noyes, has complained much of pain and inflammation of the laceration which he bathed with vinegar and water is better but feable, half pint of wine and a nourishing diet.

"John Hyatt, the blister was found to have worked well when removed and the evening after the action, and had produced an excellent affect; the gangrene had completely stopped. At present the dead skin and cellular substance has sluffed off and the wrist puts on a healthy appearance, simple dressings with poultices.

"McGee, recovers strength gradually.

"G. Reynolds, leg is stationary, dressed as before.

"Brannon, applied cataplasms to ulcer.

"Stephen Shepard, a ball came through the hold of the ship which was lined with lead and the particles of lead wounded him in innumerable places. Applied simple dressings and poltices."

This was the first day that Dr. Evans had a chance to catch up with his record keeping. Mr. Aylwin subsequently died of his wounds on 1/29/1813, the following entry on that date being outlined in black:

"Mr. Aylwin sunk gradually but still retained his senses until 1 o'clock in the morning when he expired with the cold stage of the fever, immediately before his deposition the wound bled freely. A brave or better man has never lived. To his friends his loss is great, to his country still greater. He died in the latitude 16° 15 minutes N. and Longtitude 51° W."

Commander Bainbridge's wound continued to drain and on January 8, Dr. Evans enlarged the wound and extracted a piece of copper off the railing that surrounded the gangway with irregular edges. He then brought the edges of the wound together and subsequently the wound went ahead and healed.

On January 9th Mr. Waldo's leg which had been bleeding periodically had become much inflammed and Dr. Evans amputated the leg with the following notation:

"The leg commenced bleeding about 7 and stopped easily by application of a tourniquet. The leg above on examination was much inflammed and discolored and which determined that amputation above the knee was necessary. He bore the operation with great fortitude though much debilitated. On examination of the leg after the operation it was discovered that both bones were broken in a great number of places and the fracture also extended much higher than had been expected. The muscles bleed slightly and were found of a dark color. He had been very faint since the operation and received wine in small quantities.

"Cheever subsequently ran a progressive downhill course, and died about 4 o'clock on January 27th.

"Mr. Furanse supperated and had an extremely complicated course post operatively, ultimately on January 30th discharged a large amount of pus from the wound and lingered on until February 7th when he died about midnight.

"Mr. Waldo subsequently was transferred to the Naval Hospital in Charleston after the *U. S. S. Constitution* arrived back in Boston on February 17th."

Subsequent to this action the prisoners and wounded men were landed by Commander Bainbridge in San Salvador. The official records in court of enquiry into the loss of the *Guerriere* and the statements of the officers as they left the ship indicated that they had been treated fairly and with great humanity.

Surgeon T.C. Jones of the *Guerriere* who is said to have had a reputation as an indifferent and callous surgeon in his Royal Highness' Navy stated in the *Mariner's Mirror* that the wounded were treated with callous indifference and that he was unable to attend to his wounded when on board the *U.S.S. Constitution* and complained bitterly. However, Dr. Evans rebutted this statement a year or so later, March 10, 1814, which was reproduced in the *National Intelligence* of that day stating his side of the story. Apparently the feelings were extremely bitter on both sides because of this.

The action that the *Constitution* was engaged in comprised over a period of a year not more than 7 hours of actual fighting. However, during the interval she was at sea a great deal of the time, and we find Dr. Evans treating a large variety of infectious disease, venereal disease and psychosomatic illness. One of the Marines on board was named Doherty; the name appears at practically every sick call for the majority of the years with a variety of complaints generally either luetic or gonorrhea, multiple aches and pains, periodic episodes of infectious disease.

The excitement of a single Frigate action has stirred the minds and hearts of many over the course of the past years. Considering the violence of the action and the amount of destruction and in each case having over seven hundred men engaged, it is surprising that there was such a small amount of injury on board.

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Medical Prescription Book Kept on Board U.S.S. Frigate "Constitution", Dr. Amos A. Evans, Surgeon on Board, March 26, 1812-Aug. 27, 1812, Courtesy of Clements Library, University of Michigan, Ann Arbor, Michigan, Manuscript Copy #1.

"It is impossible to conceive the estimation in which all the medical men, attached to the army, were held during the war by the people in general, as well as the military. I traveled from Philadelphia to the American camp on the North River, with Mr. Craigie (Apothecary General) a most respectable young man, and was witness to the grateful acknowledgements his countrymen seemed everywhere to bestow on him, for the service he was rendering their suffering fellow citizens, nor indeed could anything exceed the zeal, perseverance and attention of this department under the most discouraging circumstances."

George Grieve, Eighteenth Century Translation of *Travels in North America* by The Marquis de Chastellux.

THERE ARE A LOT OF PEOPLE GETTING BETWEEN YOU AND YOUR PATIENT.

Medicine today is in the spotlight, subjected to all kinds of scrutiny. Your control over patient therapy is being monitored, judged and occasionally abrogated, sometimes by unknown third parties.

The worry is that in the wake of this focus, the relationship between you and your patient will be weakened, without offsetting benefits. Consider three examples:

Drug substitution In most states, pharmacy laws, regulations or professional custom stipulate that your non-generic prescriptions be filled with the precise products you prescribe. But in the last five years, a dozen or more State laws have been changed, permitting the pharmacist in most cases to select a product of the same generic drug to fill any prescription.

Ironically, this dilution of physician control has taken place against a background of growing evidence that purportedly equivalent drug products may be inequivalent, since neither present drug standards nor their enforcement are optimal. In fact, the FDA itself says it has not enforced the same standards for hundreds of "follow-on" products that it had applied to the original NDA approvals. Thus physician control over patient therapy is being eroded with a risk that patients may be exposed to drugs of uncertain quality.

The major advertised claim for substitution is reduced prescription prices for consumers. Yet no documentation of any significant savings has been produced.

MAC Maximum Allowable Cost, MAC for short, is a Federal regulation designed to cut the Government's drug bill by setting price ceilings for drugs dispensed to Medicare and Medicaid patients. Unless the prescriber certifies on the prescription that a particular product is medically necessary, the Government intends to pay only for the cost of the lowest-priced, purportedly-equivalent, generally-available product. The effect of the program may be that elderly and indigent patients will be restricted to products which someone in Washington believes are priced right. Practicing doctors will have little to say about administration of the program, since Government will have absolute authority to make its choices stick.

The drug lag The future of drug and device research depends upon a scientific and regulatory environment that encourages therapeutic innovations. The American pharmaceutical industry annually is spending more than $1 billion of its own funds and evaluating more than 1,200 investigational compounds in clinical research. Disease targets include cancer, atherosclerosis, viruses and central nervous system disorders, among others. But there is a major barrier to the flow of new drugs to your patients: The cost of the research is more than ten times what it was, per product, in 1962; and whereas governmental clearance of new drug applications took six months then, it commonly consumes two years now.

The FDA needs adequate time, of course, to consider data. But it is equally clear that the present approval process contributes to needless delay of needed therapy. That's why the increased efficiency of the drug approval process is vital to all our futures.

If these issues concern you, we suggest that you make your voice heard—among your colleagues and your representatives in State legislatures and in Washington.

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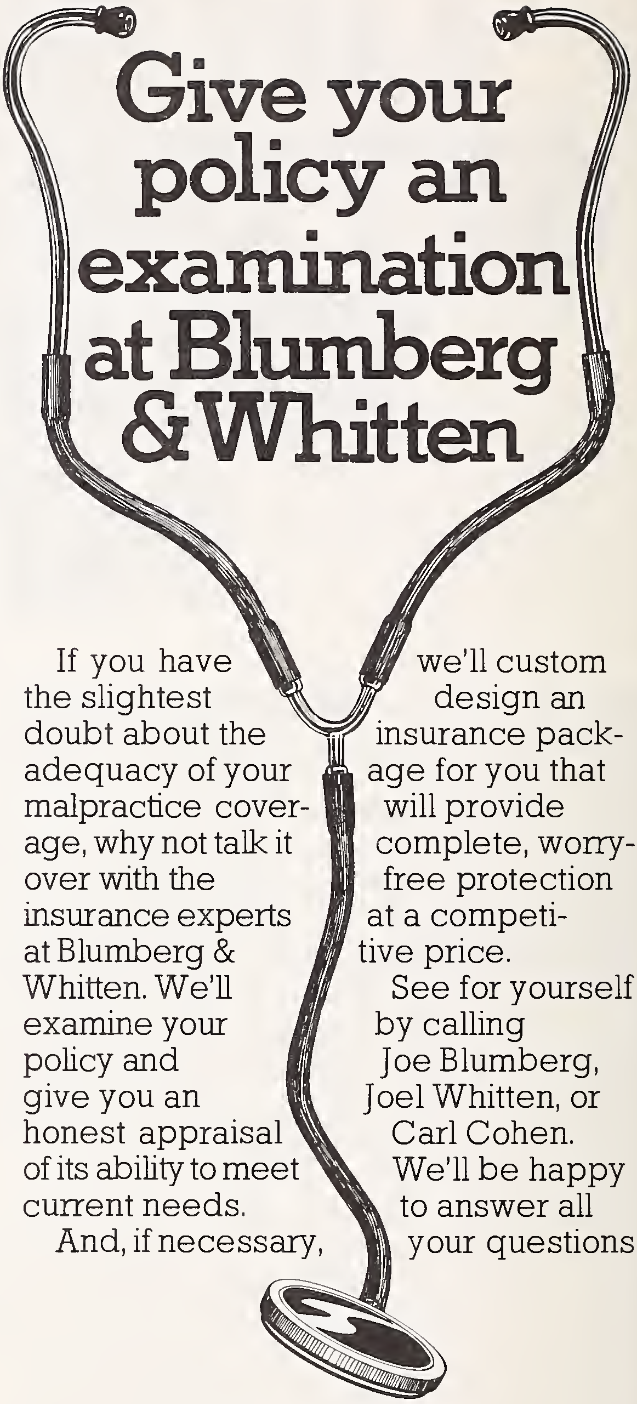

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The Presidents Page

This issue of the Journal commemorates the bicentennial year of our country. It behooves us on this occasion to review what we have accomplished during this period, wherein we have failed and to chart our future.

There can be no question as to the type and quality of care that we provide. American medicine need not look up to any other nation when it comes to quality. We have passed through the stages of setting up our own schools and developing our own teachers. Our more capable people no longer hurry off to the great medical centers of Europe to receive their advanced training. Rather we have reached the point where we provide leadership for the rest of the world to follow. Our own state certainly ranks with the best. We recognize the need for continuing education. Our specialty societies are offering the opportunity for self-assessment so that we can all be sure of our continued competence, and although we have not been willing to accept mandatory requirements in Connecticut, we do agree in principle that continuing education is desirable.

Accepting the above analysis we should be proud of the progress and achievements of American medicine; and we are. At the same time, however, there are certain nagging and disturbing facts. Our mortality statistics are not the best. Life expectancy figures are not as good as in some other countries. Infant mortality statistics are surpassed by others. Despite the fact that our capabilities are unsurpassed our results do not always measure up.

We can indicate many reasons why this condition prevails. We can argue that the reasons are sociological and not medical. We can show that our statistics are unsurpassed when applied only to those who really take advantage of what we have to offer. This, however, evades the significant sociological problem of delivery of medical care so that all will benefit from it.

This matter of delivery of medical care is one of the most significant challenges facing us today. Provision must be made to insure that the expertise available in this state and in the nation is used for the benefit of all. The delivery of medical care is every bit as much a responsibility of the medical profession as is the development of that care. No other group, be they private planners, government agencies, or any others, can appraise what is needed, or evaluate what can be delivered as well as can the medical profession. We have developed a system of voluntary private medical care which we believe provides the very best attention for those to whom it reaches. Most of us feel that our basic system should not be changed. However, if we are to continue in this vein we must find a way of extending the system so as to include fully those who are not taking advantage of it now. This must be more than a passive indication that the system exists and is available to all who would call upon it. A comprehensive program of private health care, I believe, is what most of us feel is to be desired. We have not developed such a program as yet. We can not say that we reach all segments of our population. Our challenge, as we leave this bicentennial year, is to develop such a program, to extend our system of medical care so as to be inclusive of all. If we fail in this attempt, others will prescribe a system of delivery for us. This in all likelihood will not be to our liking but even more important, probably not to our patient's benefit. Let us hope it is not too late.

Hilliard Spitz, M.D.
President

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Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing. **CONTRAINDICATIONS:** Not for use in the eyes or external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of the components. **WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended. **PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs. **ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

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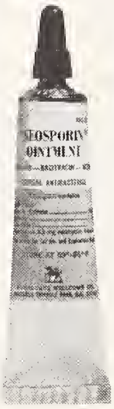

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Reflections from the Dean's Office

Robert U. Massey, M.D.

The Bicentennial Year is nearly over. For most of us it has been a festive occasion for learning new things about America, some new historical facts about Connecticut and the Nation. History is good for roots, and generally when the roots are nourished, there is more flourishing and blossoming in the tops.

History as tradition, as legend, and as myth should not be despised, even in a rationalist and empirical age. The legends get rewritten every generation or so and they help to clarify and justify the present.

History has other uses too, but for those we need more than dates of battles and elections, or anecdotes about famous or obscure people. I am thinking of the need for perspective when we feel uncertainty about directions and purposes, and when we need to know where we have been in order to decide where to go.

To recall that scientific medicine is as new as the telephone, and that modern science upon which it rests started at the time of the settlement of New England, suggests that ours may be one of the late generations of the Renaissance. In 1607, Bacon commented, "The last thing anyone would be likely to entertain is an unfamiliar thought."[1] But in 1620, the year of the Mayflower landing, Bacon's "*Novum Organum*" marked one of the beginnings of modern science, and a profusion of unfamiliar thoughts followed greater than ever before in the history of the West. William Harvey's *De Motu Cordis* came eight years later, and Galileo published his great dialogue on the motion of the earth in 1630.

Modern medicine has had many beginnings; we may not have found them all, and we should not all agree about which ones were beginnings. Microbiology could never have been born before Leuwenhoek's microscope, but by 1876 Robert Koch was ready to report his work with B. anthracis. That date more than any other marks the beginning of modern medicine; this year, 1976, therefore is our Centennial.

Others standing at the beginnings of scientific medicine were Claude Bernard in physiology, Louis Pasteur in bacteriology, Virchow in pathology, Sigmund Freud in behavioral science. Give or take a few years, it all happened at the same time, about a hundred years ago. Some of us had grandfathers who were living then, who knew the names, who felt the world change.

In this Bicentennial Year there are those who warn that all the signs suggest that western civilization may be playing out its last act, that there are only a few more lines, and that the actors are tired.

If so, it has been a glorious last act, with the promise of so many beginnings that until very recently it has seemed more like the first. Or rather than the first act in a play, it has seemed more like Part I of a long novel. The last of about seven or eight chapters has been getting us ready for Part II.

It may never be possible to navigate through time with the precision we possess in navigating through space. The charts are not as good and the technology is limited by the very nature of things. The charts showing where we have been seem to get better; we know our history better than Bacon did, because our science and our technology are better than his. We are even getting better at interpreting the blurred old charts; perhaps we shall eventually develop, as Masanao Toda has suggested, a *science of civilization,* which would be "the key that will open up a new vista of a sound and prosperous civilization of tomorrow."[2]

There are few medical schools teaching medical history now. That is too bad, because the history of medicine and science is better history than it was half a century ago; there are insights we did not have before. In a time of reformation there are critical decisions to be made. If we fail to understand what is happening, events may make those decisions for us, and we miss the chance to invent the future.

The history of medicine is one of the newest chapters in the intellectual history of the West, and it is inextricably bound to the history of art, science, philosophy, technology, politics, and economics. Somewhere within those intricate but ultimately knowable relationships lie the natural experiments from which a science of civilization might be fashioned.

ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut School of Medicine, Farmington.

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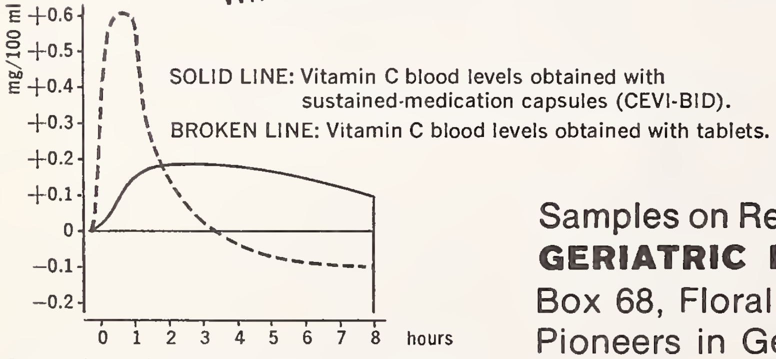

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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Summary of Actions
Council Meeting
Thursday, Oct. 28, 1976 - Thursday, Nov. 4, 1976

I. Attendance

Present in addition to the Chairman, Dr. D.A. Grendon, and the Vice Chairman, Dr. G.W. Van Syckle, were: Drs. Spitz, Friedberg, Freedman, Backhus, Hess, Canzonetti, Bradley, Cramer, Fabro, Kamens, Robinson, Harkins, James, Mendillo, Beck, Ahrens, Vidone, Eslami, Parrella and Barrett.

Also present were: Mrs. Lindquist, Mrs. Arafeh (Auxiliary President), Dr. Bongard (UConn Medical School), Mr. Tomat and Dr. Richards.

Absent were: Drs. Johnson, Nolan, Krinsky, Sonnen, Whalen, McGarry, Sadowski, Magram, Zlotsky and Middleton.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of September 29, 1976.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members as follows:

John Paul Gens, 153 East Avenue, Norwalk.
Francis P. Guida, 1441 Chapel Street, New Haven.
George E. Roberge, 51 Meadowmere Road, Stratford.
Joseph Sklaver, 95 North Main Street, Waterbury.
Paul Sutton, 174 Bridge Street, Groton.

III. Old, New and Special Business

Election of Student Members

It was VOTED to elect to Student Membership thirty-seven Connecticut residents who are enrolled in United States medical schools. A list of those elected will be published in an early issue of the Journal.

Report of Connecticut AMA Delegation

It was VOTED to receive as information several documents which, collectively, comprised a report of the Connecticut AMA Delegation. Acting on recommendations contained in the report, the Council:

(1) VOTED to approve the Vice President of the Society attending meetings of the AMA House of Delegates and be reimbursed for usual expenses incurred by such attendance.

(2) VOTED to approve, on a two-year trial basis, the obtaining and distributing to Council members after each meeting of the AMA House of Delegates: (a) "Highlights of the AMA House of Delegates", published by the California Medical Association: and (b) "Actions Taken by AMA House of Delegates", published by the office of the AMA Executive Vice President.

Progress Report on FTC Complaint

The Council VOTED to receive as information several communications having relevance to the FTC complaint and the Society's defense against same; also, the draft of a resolution, submitted by the President, proposed for submission to the AMA re AMA funding of all defense costs. It was further VOTED to adopt the resolution submitted by Dr. Spitz and transmit same to the AMA House of Delegates for consideration at its forthcoming meeting at Philadelphia in December.

Report—President of the CSMS Auxiliary

It was VOTED to receive as information, and with thanks, a report submitted by Mrs. Barbara Arafeh, Auxiliary President, which described various activities of the Auxiliary of a current nature and several activities that are in the planning stage.

Reports on 5th Biennial Conference on Continuing Medical Education

It was VOTED to accept for filing, with commendation, a report filed by Jerome K. Freedman, New Haven, on his attendance at this Conference for State Medical Associations and

Specialty Societies (Chicago, Ill., 10/5-7/76) which he attended as a representative of the Society; also a report on the same Conference filed by Vincent A. DeLuca, Jr., Derby, who attended as the chairman of the Society's Committee on CME.

Recess of Meeting

At approximately 6:15 P.M., it being determined that a quorum was no longer present, the Chairman recessed the meeting until 2:00 P.M., Thursday, November 4, 1976. The item of business under discussion at the time of recess was the budget for fiscal 1977.

Thursday, November 4, 1976

The recessed meeting of 10/28/76 was reconvened by the Chairman at approximately 2:30 P.M.

I. Attendance

Present in addition to the Chairman, Dr. D.A. Grendon, were: Drs. Spitz, Friedberg, Freedman, Backhus, Johnson, Hess, Bradley, Cramer, Fabro, Kamens, Robinson, James, Sonnen, Whalen, Beck, Vidone, Zlotsky and Middleton.

Also present were: Mrs. Lindquist, Mr. Sweeney, Mr. Tomat and Dr. Richards.

Absent were: Drs. Nolan, Van Syckle, Canzonetti, Harkins, Mendillo, Krinsky, McGarry, Ahrens, Sadowski, Magram, Eslami, Parrella and Barrett.

II. Old, New and Special Business (Cont.)

Report of Fiscal Subcommittee—1977 Budget

It was VOTED to approve the budget for fiscal 1977, as prepared by the F.S.; to approve the recommendation of the F.S. that dues in 1977 remain at $100; and to transmit the budget and recommended dues structure to the House of Delegates with Council recommendation for approval by the House.

Communication re "Acceptance of Assignment" under Medicare B

It was VOTED to receive as information a communication from Dr. Thomas M. Feeney, Medical Consultant for Medicare B (Connecticut General Life Insurance Co.), that brought to the Council's attention that the Regional Office for Medicare has expressed concern about the low level of acceptance of assigned benefits under Medicare B in Connecticut as compared to the higher levels obtaining in the other New England States. Dr. Feeney requested that Council approve the participation of CSMS representatives in a joint meeting with Connecticut General and Regional Office representatives "to explore the possibility of improving the assignment rate in Connecticut." It was also VOTED to receive as information an excerpt from the AMA's statement on "Revisions in Medicare Reimbursement to Physicians" (Subcommittee on Health, Ways and Means Committee, House of Representatives, 9/15/76) which offered several reasons why acceptance of assignment levels may be falling.

Finally, it was VOTED to request the Committee on Peer Review Systems to meet with CG and Regional Office representatives to discuss this matter and to furnish Committee members with copies of the subject excerpted statement of the AMA.

Communications re Commission on Hospitals and Health Care

It was VOTED to receive as information two subject communications as follows: (a) Notice of three statements approved by the Fairfield County Medical Association at a membership meeting held on 10/6/76; and (b) A copy of a letter sent to Governor Grasso by the Medical Staff of the Windham Community Memorial Hospital, Willimantic.

The FCMA statements expressed support for the position taken by hospitals in their current controversy with the Commission involving budgets and budget cuts; called for restructuring of the Commission in a manner similar to the Public Utilities Control Authority; and advocated more stringent requirements for qualification of Commission members relative to their experience in the field of health care.

The letter to the Governor from the Medical Staff of WCMH brought to her attention the adverse effects that the Commission's budget cuts were having at that hospital and called upon her to "assure that an overzealous bureaucracy does no further damage to the quality of health care in this State" and to "correct the damage already done."

After lengthy discussion, it was further VOTED to request the Committee on Statewide Medical Planning to make a study forthwith of the current controversy between the community hospitals of the state and the Commission on Hospitals and Health Care re budgets and budget cuts and, within two months, to report to the Council, with recommendations, as to what action the Council might take to help assure that hospitals are allowed to maintain quality care for patients.

Report of Editorial Committee re "Nahum Award"

It was VOTED to receive as information the subject Committee's proposal to revise the "Nahum Memorial Award for Medical Writing"—an award program for writing by medical students. It was further VOTED to discontinue the program (begun in 1973).

Motion re Request to Connecticut Medical Examining Board

It was VOTED to approve a subject motion as follows: "That the Council request the Connecticut Medical Examining Board to present to the Council a progress report on whether the new statute on disability of physicians (P.A. 76-276), permitting Connecticut units of organized medicine to serve as agents of the Board, has been implemented and, if so, whether this arrangement has been effective in dealing with suspected or alleged situations involving professional misconduct.

Date of Next Meeting

The Chairman set the date for the next meeting of the Council as Wednesday, December 15, 1976.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on October 28, 1976. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

Chiropractic

This preposterous quackery flourishes lushly in the back reaches of the Republic, and begins to conquer the less civilized folk of the big cities. As the old-time family doctor dies out in the country towns, with no competent successor willing to take over his dismal business, he is followed by some hearty blacksmith or ice-wagon driver, turned into a chiropractor in six months, often by correspondence. In Los Angeles the Damned there are probably more chiropractors than actual physicians, and they are far more generally esteemed. Proceeding from the Ambassador Hotel to the heart of the town, along Wilshire Boulevard, one passes scores of their gaudy signs; there are even many chiropractic "hospitals." The Mormons who pour in from the prairies and deserts, most of them ailing, patronize these "hospitals" copiously, and give to the chiropractic pathology the same high respect that they accord to the theology of the town sorcerers. That pathology is grounded upon the doctrine that all human ills are caused by the pressure of misplaced vertebrae upon the nerves which come out of the spinal cord—in other words, that every disease is the result of a pinch. This, plainly enough, is buncombe. The chiropractic therapeutics rest upon the doctrine that the way to get rid of such pinches is to climb upon a table and submit to a heroic pummeling by a retired piano-mover. This, obviously, is buncombe doubly damned.

……

But chiropractic, of course, is not perfect. It has superb potentialities, but only too often they are not converted into concrete cadavers. The hygienists rescue many of its foreordained customers, and turning them over to agents of the Medical Trust, maintained at the public expense, get them cured. Moreover, chiropractic itself is not certainly fatal: even an Iowan with diabetes may survive its embraces. Yet, worse, I have a suspicion that it sometimes actually cures. For all I know (or any orthodox pathologist seems to know) it *may* be true that certain malaises are caused by the pressure of vagrom vertebrae upon the spinal nerves. And it *may* be true that a hearty ex-boilermaker, by a vigorous yanking and kneading, may be able to relieve that pressure. What is needed is a scientific inquiry into the matter, under rigid test conditions, by a committee of men learned in the architecture and plumbing of the body, and of a high and incorruptible sagacity. Let a thousand patients be selected, let a gang of selected chiropractors examine their backbones and determine what is the matter with them, and then let these diagnoses be checked up by the exact methods of scientific medicine. Then let the same chiropractors essay to cure the patients whose maladies have been determined. My guess is that the chiropractors' errors in diagnosis will run to at least 96% and that their failures in treatment will push 99%. But I am willing to be convinced.

Where is such a committee to be found? I undertake to nominate it at ten minutes' notice. The land swarms with men competent in anatomy and pathology, and yet not engaged as doctors. There are thousands of hospitals, with endless clinical material. I offer to supply the committee with cigars and music during the test. I offer, further, to supply both the committee and the chiropractors with sound wet goods. I offer, finally, to give a bawdy banquet to the whole Medical Trust at the conclusion of the proceedings.

H.L. Mencken, *A Mencken Chrestomathy,* Alfred A. Knopf, N.Y.

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SPECIAL NOTICES

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TITLE: Nonisotopic Specific Protein Analysis

SPEAKER: Robert F. Ritchie, M.D., Director, Rheumatic Disease Laboratory, Maine Medical Center

TIME: 11:00 a.m.

PLACE: Amphitheater, ST. FRANCIS HOSPITAL
114 Woodland Street, Hartford, Connecticut

FOR INFORMATION: Jayson Hyun, M.D.
Director of Immunology Laboratory
Tel: (203) 548-4368

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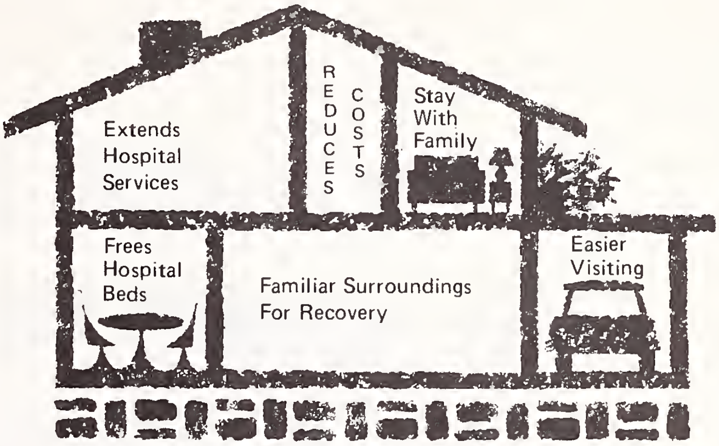

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Anesthesiology: Wishes to relocate in the U.S.A. Connecticut license pending. Trained in Ireland and Canada. Certified in Canada. 47 years of age. Married. Medium sized community desired. Roy B. Weston, M.D., 7 Warlock Crescent, Willowdale, Ontario, Canada.

Industrial or Institutional Medicine: Part time or full time. Desires western Connecticut within fifty mile radius of Hudson Valley area in New York State. 64 years old. Experience in family practice and general surgery. Vincent V. Barone, M.D., Charlotte Road, Fishkill, N.Y.

Internal Medicine: Board eligible. Available July 1977. Desires Southwestern Connecticut. M.D. from Emory; Internship and residence at Tulane. 28 years old. Married. Group or associate practice. General medicine. Bennett H. Bruckner, M.D., 3915 St. Charles Avenue, New Orleans, LA 70115.

Obs/Gyn: Available in July. Connecticut license. Presently at Yale New Haven Health Center. Had been Coordinator of Obstetrics USPHS. Indian Hospital. Columbia undergraduate; M.D. from NYU. 30 years old. Married. Desires large or medium sized community. Ian M. Cohen, M.D., 182 Ray Road, New Haven, CT 06515. Telephone 389-9879.

Obs/Gyn: Available now. Desires group or associate practice. Connecticut license. FLEX. Completed internship at Coney Island Hospital and residency at Maimonides. Alfredo A. Cola, M.D., 39 Southwind Drive, Waterbury, CT 06708.

Obs/Gyn: Available July 1977. Board eligible; twenty-nine years of age. Completing residency at University of Cincinnati. Group or associate practice. M.D. from New York Medical College. Internship at Emory University. David C. Handwerker, M.D., 9133 Winton Road, Apt. 25, Cincinnati, O 45231.

Obs/Gyn: Available July 1977. Connecticut license through FLEX. Presently at UConn Health Center. M.D. from Wayne State in Michigan. Fellowship at Harvard. 32 years old. Kenneth J. Hekman, M.D., 62 West End Avenue, New Britain, CT 06052.

Obs/Gyn: Board eligible. Available July 1977. Completing residency at Washington University/Barnes Hospital. Desires group or associate practice. 29 years old. Charles T. Mann, M.D., 11 Lauder Court, Creve Coeur, MO 63131.

Obs/Gyn: Available now. Desires Greater New Haven area. Connecticut license. Clinic position. Experience with Family Planning Nurse Practitioners. Armada M. Sittig, M.D., 587C Prospect Street, New Haven, CT 06511 (776-4318).

Ophthalmology: Available November 1977. Board eligible. Dartmouth Graduate; M.D. from University of Pennsylvania; Internship at Greenwich Hospital; University of Penn. residency. Presently on active duty. 31 years old. Married. Solo, group or associate practice. Jay B. Gooze, M.D., 556OA Hiers Street, Ft. Knox, KY 40121.

Ophthalmology: M.D. from Einstein College of Medicine; solo, group or associate practice. Available summer of 1977. 33 years old Board eligible. Special interest in retinal diseases and fluoroscein angiography and photocoagulation. Sterling J. Haidt, M.D., 737 El Medio Avenue, Pacific Palisades, CA 90272.

Ophthalmology: Available July 1977. M.D. from St. Louis University. Completing residency at Ohio State University Hospital. Board eligible. Solo, group associate practice. George R. Zambelli, M.D., 1353 Bradshire Road, Columbus, O 43220.

Orthopaedic Surgery: Available July 1977. Board eligible. Sat for exams in September. Completing residency at Duke University Medical Center. 33 years old. Desires group, associate or institutional practice. Dartmouth graduate. M.D. from Duke. Resume on file at CSMS. P.K.K. Ortho.

Orthopaedic Surgery: Available July 1977. 30 years old. Completing residency at University of Michigan. M.D. from Northwestern University. Desires group practice. Thomas J. O'Keefe, M.D., 655 Hidden Valley Drive, Ann Arbor MI 48104.

ENT: Available July 1977. Board eligible. M.D. from Georgetown. Residency at Washington Hospital Center. Desires coastal area. Solo, group or associate practice. Arthur H. Schwartz, M.D., 2517K N.W. #601, Washington, D.C. Telephone 202-337-5625.

Pathology: Anatomic and Clinical. Available May 1977. Board certified. Presently on active duty with US Navy. M.D. from Temple. Internship and residency at the Naval Hospital in Oakland, California, Thomas J. Joseph, M.D., 46 Brighton Drive, Gaithersburg, MD 20760.

Pathology: Available July 1977. Board eligible. FLEX. Completing residency at University of Maryland Hospital, Baltimore. 37 years old. Him G. Kwee, M.D., 207 Duke of York Lane T-1, Cockeysville, MD 21030.

Pediatrics: Available now. 33 years old. Desires group or hospital setting. M.D. from Einstein. Residency at Children's Hospital at Norfolk and Medical College of VA. Stewart Gabel, M.D., 5805 Tivoli Circle, Richmond, VA 23227.

Pediatrics: Available now. 32 years old. Board certified. FLEX. Connecticut license. Wishes to relocate from N.Y.C. Presently in practice. Varsha Shah, M.D. 2012 Hobart Avenue, Bronx, NY 10461.

Family Practice: Available Summer of 1977. Board eligible. Medium or small community with group practice, if possible. M.D. and M.P.H. from University of No. Carolina. 30 years old. Completing program at Highland Hospital, Rochester, New York. Lloyd K. Comstock, M.D., 208 Aberdeen Street, Rochester, NY 14619.

Family Practice: July 1977. Board eligible. Interested in medium sized community in group, institutional or industrial practice or multispecialty group. M.D. from University of Pittsburgh. Completing training at York Hospital, York, PA. 28 years old. Married. Gary M. Cummins, M.D., 124 Oak Ridge Drive, York, PA 17402.

Family Practice: July 1977. Board eligible. Desires group practice in large or medium sized community. 28 years old. Married. M.D. from Hahnemann Medical College. Family Practice Residency Program at Johnson City, NY. V.E.F.P. c/o CSMS.

Family Practice: Available now. Connecticut license. Husband a physician in Greenwich. Wishes part or full time in general medicine. Completed two years of a three year family practice residency at Jefferson Medical College. Catherine F. Falvey, M.D., Apt. 3H, Prescott House, Greenwich, CT 06830.

Family Practice: Available August 1977. Board certified. Presently in practice. M.D. from Jefferson Medical College. Completed Family Practice at Wilmington Medical Center, Delaware. 30 years old. Married. Group or associate or institutional practice desired. Stephen P. Flynn, M.D., 245 Hollywood Blvd., Havelock, NC 28532.

Family Practice: Available July 1977. Prefers location near college or university in associate type practice. M.D. from Ohio State. Enrolled in Family Practice Program at MacNeal Memorial Hospital, Berwyn, Illinois. 27 years old. Jerry A. Friemoth, M.D., Family Practice Center, MacNeal Hospital, Berwyn, IL 60402.

Family Practice: Available July 1977. Associate practice in college town. Board eligible. 29 years old. Married. Yale graduate. M.D. from University of Illinois. Jonathan H. Jaffe, M.D., 3249 S. Oak Park Avenue, Berwyn, IL 60402.

Family Practice: Completed Family Practice Program in 1976. Desires group practice in CT. Attended Avon Old Farms School, Avon. M.D. from University of Minnesota. Edward P. LaMotta, M.D., 183 Little Canada Road, #219, St. Paul, MN 55117.

Family Practice: Available August 1977. Board eligible. FLEX. Associate practice in medium sized community. 29 years old. Married. M.D. from University College, Galway, Ireland. Completing Family Practice Residency at University of Rochester, N.Y. John B. McGuckin, M.D., 570 Linden St., Rochester, NY 14620.

Family Practice: Available August 1977. Board eligible. Group practice in large or medium sized community. M.D. from Jefferson Medical College. Presently at York Hospital, York, PA. 27 years old. Married. Anthony D. Molinaro, Jr., M.D., 1927 Queenswood Drive, H-106, York, PA 17403.

Family Practice: Presently in US Navy. Available September 1977. Board eligible. Solo or small group practice desired in medium sized community. Princeton graduate. M.D. from N.Y.U. Residency completed in 1975 at St. Joseph's Hospital in Syracuse, N.Y. 29 years old. Married. Peter J. Peff, M.D., Box 92, Rt. 1, Atoka, TE 38004.

Family Practice: Available July 1977. Presently on active duty. Board certified. Desires group practice in medium sized community. M.D. from S.U.N.Y. at Buffalo. 3 year Family Practice Program at St. Joseph's Hospital in Syracuse. 30 years old. Married. George M. Rosenfeld, M.D., N5 Phythian Road, U.S.N.A., Annapolis, MD 21402.

Family Practice: Available July 1977. Desires medium sized community in the northwestern section of Connecticut. Graduate of University of Rochester. M.D. from Upstate Medical Center. Internship at Bridgeport Hospital. Family Practice Program at Lynchburg, VA. Frederick W. Sloan, M.D., 408 Belvedere Street, Lynchburg, VA 24503.

Internal Medicine: Available July 1977. Board eligible. Interested in primary care. M.D. from Albany Medical College. Internship at Rhode Island Hospital. Residency at Albany Medical Center. Group or associate practice. 28 years old. Married. Michael R. Barnett, M.D., Box 98, R.D. #1, Altamont, NY 12009.

Internal Medicine: Board certified. Connecticut license. Completing GI Fellowship at UConn Medical Center. Available July 1977. Resume available. B-GI c/o CSMS.

Internal Medicine: (Cardiology) Group or associate practice in large community. 33 years old. Married. M.D. from Columbia P&S. Fellowships at Louisville General and Cincinnati General. Completed 2 years in US Army. Eugene W. Green, Jr., M.D., 260 Laurie Vallee, Louisville, KY 40223.

Internal Medicine: (Gastroenterology) Completing fellowship at University of VT. M.D. from University of Minn. Group or associate practice in large or medium sized community. Board eligible. 30 years old. Married. Completed duty in Air Force. Stephen E. Kaufman, M.D., 564 So. Willard Street, Apt. #9, Burlington, VT 05401.

Internal Medicine: Board eligible. Available July 1977. Trinity graduate. M.D. from N.Y. Medical College. Internship and residency at New England Deaconess in Boston. Desires group or associate practice in medium sized community. 29 years old. Married. Craig W. Markert, M.D., 40 St. Paul Street, Brookline, MA 02146.

Internal Medicine: (Hematology-Oncology) Board certified in I.M. Board eligible in oncology and hematology. Group or associate practice desired. M.D. from Albany Medical College. Fellowship at Dartmouth-Mary Hitchcock Medical Center. Available July 1977. R. Curtis Mills, M.D., RFD 349, Norwich, VT 05055.

Internal Medicine: (Nephrology) Board eligible. Available July 1977. Group or associate practice. 29 years old. Married. M.D. from Duke. Completing fellowship at Duke. 2 years in USAF. Complete resume on file at CSMS or write Box 3447, Durham, NC 27710.

Internal Medicine: (Infectious Diseases) Board certified ABIM. Group practice or associate arrangement desired. 30 years old. Married. M.D. from Albany Medical College. Completing fellowship at Brown in Providence, R.I. Thomas L. Parsley, M.D., Apt. 21, 1588 Main Street, West Warwick, RI 02893.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

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Family Practice: Group practice. Eastern shore community. Greater New Haven area. Contact CSMS for details.

Allergy: Established practice. Physician desires to form partnership. Excellent opportunity for M.D. wishing to locate in the Hartford area. Write Allergy—CSMS.

Anesthesiology: Contact Anesthesiology, P.O. Box 1172, Fairfield, CT. 06430.

Public Health: Full-time Director for the City of Meriden. Write Director of Personnel, Mr. Edward J. Papandrea, 142 East Main Street, Meriden, CT 06450.

Part-Time Position: School physician needed to assist with teams and school health. Mr. Richard Welch, Director of Special Service, East Hartford, CT. 289-7411, ext. 221.

Pediatrics: Opportunity to join two pediatricians in a group in the Greater New Haven area. Contact CSMS.

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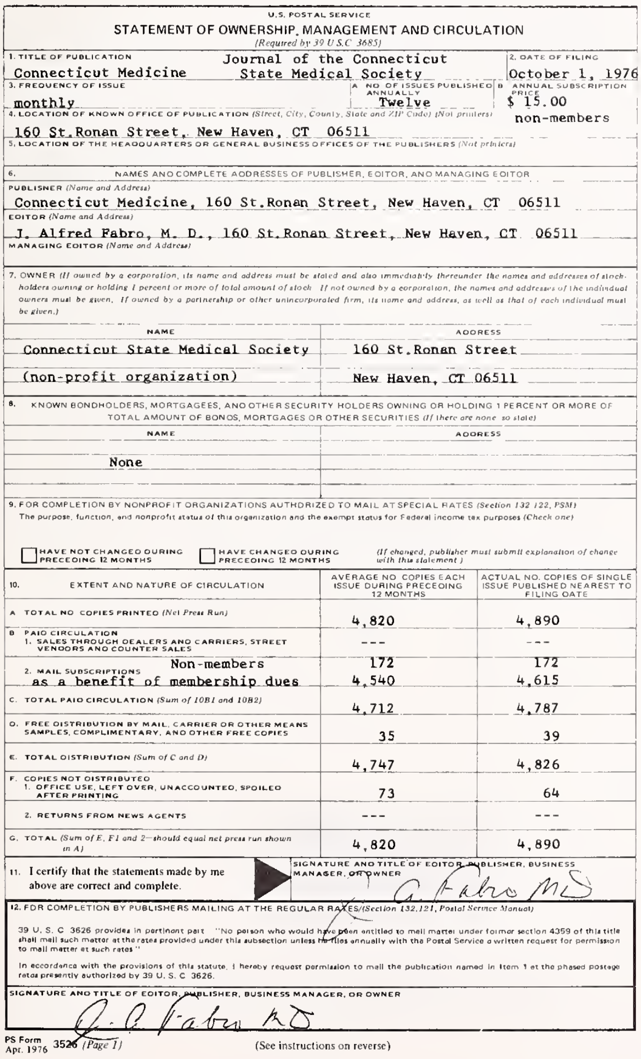

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7. OWNER *(If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)*

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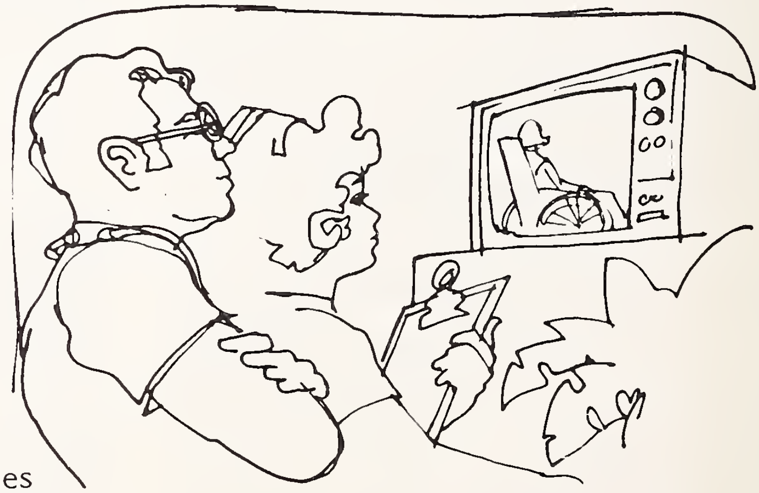

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of the

CONNECTICUT STATE MEDICAL SOCIETY

and the

Auxiliary

FOUNDED IN 1792

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CSMS MEMBERSHIP

An exact statement of membership requirements appears in the Bylaws of the Connecticut State Medical Society.

Active Members:

Active membership shall be limited to those members of component associations who are certified to the Executive Director of The Society as entitled to exercise all rights of membership in their component associations including the rights to vote and hold office. A physician eligible for active membership in The Society becomes an active member of The Society upon receipt by The Society of annual dues, which are established annually by the House of Delegates.

Associate Members:

Individuals interested in the science of medicine and public health, but are not licensed to practice medicine in the State of Connecticut may apply for associate membership in The Society. Once elected, an associate member may attend meetings, serve on committees, present papers before The Society, but may not vote or hold elective office.

Honorary Members:

Eminent physicians may be made honorary members by a majority vote of the House of Delegates. Honorary members may not vote or hold office and are not expected to pay dues.

Life Members:

Any member of The Society who has been an active member of The Society or of the American Medical Association for thirty-five consecutive years or who has reached his sixty-fifth birthday anniversary and has been an active member of The Society or of the American Medical Association for fifteen or more years, or any active member of The Society who becomes totally and permanently disabled shall be eligible for life membership. A physician eligible for life membership may apply for such membership to the Executive Director of The Society and shall become a life member on approval by the Council. Life members shall not be subject to dues or assessments but shall be accorded all the rights and privileges of active membership in The Society including the rights to vote and hold office.

Exemption from payment of dues for Life Members shall become effective on January 1 of the year following the thirty-fifth year of membership or of the anniversary year of their sixty-fifth birthday, whichever is applicable.

Student Members:

Any bona fide medical student in the State of Connecticut or any Connecticut resident attending an out of state medical school may become a student member of The Society. Physicians, not licensed to practice medicine in Connecticut, who are serving as interns and residents in Connecticut hospitals may obtain student membership. Student members file special applications for membership to the Council. Student members may not vote or hold office and are not required to pay dues.

Members who become inactive or are expelled or suspended from a county association will be placed in the same category with The Society.

THE HOUSE OF DELEGATES

Powers and Duties:

The House of Delegates is the ultimate legislative and policy-making body of the Society and assumes primary responsibility for the management of the affairs of the Society. As such, it elects the Society's officers, boards and committees, formulates the bylaws, approves budgets and assesses membership dues.

Composition:

The membership of the House consists of the delegates elected by the component county medical associations (one delegate for each thirty-five members or fraction thereof), the members of the Council, and the past presidents of the Society, ex-officio and without vote. All members of the House must have been members of the Society for at least two years immediately prior to being seated.

Meetings:

The House of Delegates holds two regular meetings each year, one in the fall and one in the spring. Special meetings of the House may be called by the Speaker on written requests of twenty-five or more delegates or by a majority of the voting members of the Council. At special meetings, no business other than that stipulated in the call for the meeting may be considered. Meetings of the House of Delegates are open to all members who wish to attend as observers.

Introduction of Resolutions:

Resolutions must be received in writing at the office of the Executive Director not later than thirty days before the date scheduled for the convening of the House in order to be considered as regular business. Resolutions presented later than the deadline may be considered if accepted by a majority vote of the House.

Referendum:

A referendum on any issue may be conducted among the members of the Society, if approved by a two-thirds vote of the delegates. The majority vote of those members responding to the referendum shall determine the question and be binding on the House of Delegates.

THE COUNCIL

Powers and Duties:

The Council is granted by the House of Delegates all powers necessary to act as the executive and administrative body of the Society while the House is not in session.

Composition:

The Council consists of the general officers of the Society, any member who is serving as a general officer of the American Medical Association, and the Councilors and Associate Councilors elected by the component county medical associations.

Meetings:

Under normal circumstances the Council meets at monthly intervals throughout the year. On occasion, the Council may hold additional meetings for the purpose of considering, or completing action on, matters of special importance. Meetings other than those scheduled by consent of the Council may be called by the Chairman or upon petition of three members of the Council.

Procedure:

As with the House of Delegates, any member of the Society or any group of members may submit matters to the Council for consideration. Such communications are to be addressed in writing to the Chairman of the Council care of the Society's headquarters, 160 St. Ronan Street, New Haven, and will be placed on the agenda of the earliest meeting possible following receipt. In most instances, the decision of the Council is equivalent to a decision by the House of Delegates. However, in certain instances, the Council may elect to transmit the matter, with recommendations, to the House of Delegates for final disposition.

MEDICAL ETHICS

The Bylaws of the Connecticut State Medical Society state that "the Principles of Medical Ethics of American Medical Association shall govern the conduct of members in their relations to each other and to the public".

PREAMBLE: These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

SECTION 1: The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

SECTION 2: Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

SECTION 3: A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

SECTION 4: The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

SECTION 5: A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

SECTION 6: A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

SECTION 7: In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

SECTION 8: A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

SECTION 9: A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

SECTION 10: The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community.

ANNUAL RENEWAL OF MEDICAL LICENSES

Section 19-45 (b) of the Connecticut statutes requires renewal of medical licenses annually during the month of January. An IBM application is sent at the end of December. The registration fee is $160.00. There is no pro-rating.

No fee is required of practitioners residing and practicing outside of Connecticut; in military service, or retired, but there is no exemption for anyone from the registration requirement. Everyone must register. The penalty for failure to renew is $100.00.

Registration is handled through the State Department of Health, 79 Elm Street, Hartford, Connecticut 06115.

CHANGE OF ADDRESS

Practitioners are required to report to the State Department of Health within thirty days any change of address for his or her office and/or residence. (Section 19-46)

REGISTRATION OF X-RAY DEVICES USED FOR DIAGNOSIS AND THERAPY

Connecticut statutes require that the owner of any device or devices emitting x-rays which are used for diagnostic and therapeutic purposes must be registered with the State Department of Environmental Protection, State Office Building, Hartford, Connecticut 06115. Owner, according to statute, means any person or organization having by law the administrative control of the x-ray device or devices.

Registrations at the present time must be renewed biennially during the month of April in the even-numbered years. The fee at each location is fifteen dollars for one x-ray device, five dollars for the second device, and one dollar for each additional x-ray device registered by one owner.

DIRECTORY OF KEY NAMES AND ADDRESSES FOR THE STATE DEPARTMENT OF HEALTH

Connecticut State Department of Health
79 Elm Street
Hartford, Connecticut 06115

Douglas S. Lloyd, M.D., M.P.H., Commissioner
Tel: 566-2279

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Michael Weber, D.D.S.
South Central Regional Office
Laurel Heights Hospital
Shelton 06487
Tel: 735-9513

AVAILABLE LABORATORY SERVICES

Free laboratory tests are provided by the Connecticut State Department of Health for the diagnosis and control of the following preventable diseases:

Anthrax—Cultures for anthrax bacilli.

Brucellosis (undulant fever)—Agglutination tests; cultures.

Diphtheria—Cultures; virulence tests.

Enteric Bacillary Infections—Stool examinations for Salmonella, Shigella and Enteropathogenic E. Coli.

Food Infections and Food Poisoning—Tests for causative organism, including salmonellae, staphylococci and Clostridium perfrigens; tests for botulism toxin.

Genital Smears—Candidiasis and trichomoniasis.

Gonorrhea—Smears and cultures.

Infectious Mononucleosis—Serologic tests.

Lead Poisoning—Blood specimens for lead determinations. Urine specimens for ALA determinations.

Leptospirosis—Serologic tests; cultures by arrangement.

Malaria—Blood smears; Serological tests.

Mycoses or Fungus Infections—Microscopic, cultural, and serologic examinations for pathogenic molds and yeasts.

Parasitic Diseases—Stool examinations for amebae, other protozoa and helminths; serologic tests; anal swabbings for pinworms.

Pertussis—Culture; FA test.

Rabies—Animal brains for rabies virus.

Rickettsial Infections—Serologic tests on paired blood serums.

Staphylococcal Infections—For epidemiological investigations by bacteriophage typing of isolants.

Streptococcal Infections—Throat cultures; serologic grouping; streptococcal antibody tests; culture kits (inquire).

Syphilis—Serologic tests; darkfield examinations.

Toxoplasmosis—Serologic tests.

Tuberculosis—Microscopic, cultural, biochemical tests, and antibiotic sensitivity tests.

Tularemia—Agglutination tests; cultures.

Typhoid—Agglutination tests; cultural tests on blood, feces and urine.

Vincent's Infection—Pus smears.

Viral Infections—Serologic tests on paired blood specimens; cultural tests.

SEND ALL SPECIMENS TO LABORATORY DIVISION, STATE DEPARTMENT OF HEALTH
P.O. Box 1689, HARTFORD, CONNECTICUT 06101

Containers for forwarding specimens can be obtained from local directors of health or directly from Laboratory Division

10 Clinton St., Hartford, Conn. 06101 TEL: 566-2536, 566-3971

Other special cultural and serological tests may be available. Direct inquiries to:

566-5723 (Bacteriology) or 566-4776 (Virology).

MEDICAL ASSISTANCE PROGRAM

The Connecticut Department of Social Services Provides for Payment of Medical Care Under the Title XIX Program for:

1. All recipients receiving money payments under the AFDC program.
2. Children committed to the Department of Children and Youth Services.
3. Medically needy children under 18 of parents receiving General Assistance.
4. Medically needy individuals under 21 years of age in the community.
5. Categorically needy and medically needy groups of aged, blind and disabled.

The State Funded Program, namely, Connecticut Assistance and Medical Aid Program for the Disabled provides medical care for disabled individuals, who do not meet the Title XVI or Title II definition of disability, but who meet the Department of Social Services definition of disability.

These programs are administered through the District and Sub-Offices of the Department of Social Services. Physicians are advised to contact the nearest office:

Hartford	2550 Main Street	566-5900
New Haven	194 Bassett Street	787-6181
Bridgeport	434 State Street	384-1761
Norwich	279 Main Street	889-2351
Torrington	352 Main Street	482-5531
Waterbury	79 Linden Street	578-1211
Middletown	117 Main Street Ext.	347-4411
Stamford	1642 Bedford Street	348-9245
Manchester	Suite 205, 364 West Middle Tpke.	647-1441
Danbury	405 Main Street	744-2494
New Britain	233 Main Street	224-2601
Meriden	139 Charles Street	238-1991
Bristol	308 Main Street	583-1671

DEPARTMENT OF MENTAL HEALTH

Physicians may obtain detailed descriptions of the various programs sponsored for the care of the mentally ill by contacting the State Department of Mental Health, 90 Washington Street, Hartford, Connecticut. Telephone 566-3679 or 566-5270.

Department of Mental Health Facilities

Blue Hills Hospital
51 Coventry Street
Hartford, Conn. 06112
Phone: 566-4404

Conn. Mental Health Center
34 Park Street
New Haven, Conn. 06508
Phone: 772-3300

Connecticut Valley Hospital
Middletown, Conn. 06457
Phone: 347-5651

Franklin S. DuBois Day Treatment Center
49 Glenbrook Rd.
Stamford, Conn. 06902
Phone: 327-0620

Fairfield Hills Hospital
Newtown, Conn. 06470
Phone: 426-2531

Greater Bridgeport Community Mental Health Center
1635 Central Ave.
Bridgeport, Conn. 06610
Phone: 348-1711

Norwich Hospital
Norwich, Conn. 06360
Phone: 889-7361

Undercliff Mental Health Center
Meriden, Conn. 06450
Phone: 235-5743

Whiting Forensic Institute
P. O. Box 70
Middletown, Conn. 06457
Phone: 347-8059

Inquiries concerning drug and alcohol dependency may also be made at the following locations:

Regional Outpatient Clinic
2 Holcomb St.
Hartford, Conn. 06112
Phone: 566-3124

Regional Outpatient Clinic
St. Mary's Hospital
Waterbury, Conn. 06702
Phone: 757-9687

Regional Outpatient Clinic
412 Orange St.
New Haven, Conn. 06511
Phone: 787-5931

Regional Outpatient Clinic
60 Guernsey Street
Stamford, Conn. 06901
Phone: 359-0710

Drug information is available at the:

Connecticut Mental Health Center
New Haven, Phone: 772-3300

Capitol Region Drug Information Center
179 Allyn Street, Suite 403, Hartford, Conn. 06102 Tel. 547-1300

Admission into state sponsored treatment facilities is defined in a number of Connecticut statutes. Specific information on the various statutes is available through the Public Information Officer of the State Department of Mental Health.

The following are some of the modes of admission to state facilities:

Informal—request made by patient; free to leave at any time. (Section 17-187(b).)

Voluntary—request made in writing by patient; may not be confined more than ten days after written request to leave. (Section 17-187(a).)

Informal or Voluntary for drug dependent person—inpatient treatment available; patient shall not be discharged for at least 90 days after admission. (Section 19-494.)

Physician's Emergency Certificate—issued by a physician; commitment for no more than 45 days. (Section 17-183.)

Court Commitments—certain courts may commit a person on grounds of insanity, mental retardation, alcoholism or drug dependency to certain facilities of the Department of Mental Health and/or to the Commissioner for treatment. (Section 54-40 and Section 17-185.)

REPORTABLE DISEASES

Section 19-13-A3 of the Connecticut statutes requires that a physician report to the local director of health within whose jurisdiction such patient is, the full name, age, address and occupation of the patient, with the name of the disease. The report may be made by telephone if practicable, but must also be submitted in writing within twelve hours after the recognition of the disease. Special forms for reporting this information are available from the State Department of Health.

Actinomycosis
Amebiasis
Anthrax
Botulism (see Food Poisoning)
Brucellosis (Undulant Fever)
Chancroid
Chickenpox (Varicella)
Cholera (Asiatic)
Conjunctivitis, infectious (all types except trachoma)
(During first 14 days of life reported as ophthalmia neonatorum)
(See ophthalmia neonatorum)
Diarrhea of Newborn Epidemic (Institutional)
Diphtheria (all forms)
Dysentery, Amebic (see Amebiasis)
Dysentery Bacillary (Shigellosis)
Encephalitis (all types)
Food Poisoning
  A. Staphylococcus
  B. Botulism
  C. Other
German Measles (Rubella)
Glanders
Glomerulonephritis (acute)
Gonorrhea
Granuloma Inguinale
Hemorrhagic Jaundice (see Leptospirosis)
Hepatitis, Infectious (Acute catarrhal jaundice)
Hepatitis, Serum
Histoplasmosis
Hookworm Infection
Impetigo of the Newborn (Pemphigus neonatorium Institutional)
Influenza
Lead Poisoning—(Abnormal body burden of lead)
Leprosy (Hansen's disease)
Leptospirosis (Including Hemorrhagic Jaundice and Weil's disease)
Lymphogranuloma Venereum (Inguinale)
Malaria
Measles (Rubeola)
Meningitis
  A. Meningococcal and Meningococcemia
  B. Hemophilus Influenzae
  C. Other Types
Mononucleosis Infectious (Glandular fever)
Mumps (Infectious parotitis)
Ophthalmia Neonatorum (Includes any infection of the babies' eyes during the first 14 days of life)
Paratyphoid Fever
Pertussis (Whooping Cough)
Plague
Poliomyelitis
Psittacosis (Ornithosis)
Q Fever
Rabies (in humans)
Rheumatic Fever
Rickettsialpox
Ringworm of the Scalp (Tinea Capitis)
Rocky Mountain Spotted Fever
Salmonella Infections
  1. Paratyphoid syndrome
  2. Gastroenteritis
  3. Other Types
Scarlet Fever (see Streptococcal Infections, Respiratory)
Smallpox (Variola minor and Variola major)
Streptococcal Infections Respiratory (including Scarlet Fever)
Staphylococcal Infection
  A. Insti. Outbreaks
  B. Under 6 weeks' age
Streptococcal Infections (Other than respiratory)
  A. Erysipelas
  B. Puerperal Infection
Syphilis
Tetanus
Trachoma
Trichinosis
Tuberculosis, Other Forms
Tuberculosis, Pulmonary
Tularemia
Typhoid Fever
Typhus Fever (Epidemic and Endemic)
Undulant Fever (Brucellosis)
Whooping Cough (Pertussis)
Yellow Fever

DISEASES REPORTABLE DIRECTLY TO STATE DEPARTMENT OF HEALTH

Epilepsy

DISEASES REPORTABLE DIRECTLY TO STATE DEPARTMENT OF LABOR

Occupational Diseases

CONDENSED REGULATIONS FOR PRESCRIBERS CONCERNING CONTROLLED SUBSTANCES

The following information on controlled substances, as they relate to practicing physicians, has been condensed from various state and federal sources and has been prepared by the Joint Medical-Pharmaceutical Committee of the Connecticut State Medical Society and the Connecticut Pharmaceutical Association and by the Drug Control Division of the Connecticut Department of Consumer Protection.

Information Sources

Literature on controlled substances, dangerous drugs, drug legislation and drug abuse may be obtained by contacting:

Drug Enforcement Agency
Room 628E
450 Main Street
Hartford, Conn. 06103 (244-3230)

or Drug Control Division
Department of Consumer Protection
State Office Building, Room G37, 165 Capitol Ave.
Hartford, Conn. 06115 (566-4490)

Registration and Renewal Requirements

Practicing physicians involved with either the purchasing, the administering, the dispensing or the prescribing of controlled substances must file a controlled substances registration form (B.N.D. 224) with the Department of Justice, Drug Enforcement Agency, P. O. 28083, Central Station, Washington, D. C. 20005. Each physician who files such a form will be issued a seven digit D.E.A. number. Connecticut physicians should check all six boxes on the form under "2. Drug Schedules".

A renewal application must be filed each year. A $5.00 annual fee must accompany each application. Failure to register annually will make a physician ineligible to purchase, to administer or to prescribe controlled drugs. The expiration date will not be uniform for all physicians in the state. The renewal forms must be filed 45 to 60 days before the expiration date which is printed on the D.E.A. forms which will be mailed to each physician. A complete and accurate inventory of all controlled drugs must be taken upon original registration. Thereafter, a biennial inventory should be taken on May 1 of each second year and filed with other drug records.

Prescribing, Purchasing and Dispensing Requirements

The D.E.A. number must appear on each prescription blank in such a way that it can not be altered. Generally speaking, controlled drugs are all narcotics, amphetamines, barbiturates and other potent drugs having a potential for abuse as defined under state and federal laws. Stock packages of controlled drugs bear the capital letter "C" with a Roman numeral II — III — IV — or V on the label to identify their controlled drug schedule. Drugs with higher abuse potential are placed in the II category. Some examples of commonly prescribed drugs in each of these categories are given in Appendix I.

If a practitioner engages in purchasing and dispensing any controlled drugs he is required to keep a record of all controlled drugs received from *all* sources (including samples) and dispensed by him. The record should indicate the date of receipt, the name and address of the person from whom received, and the kind and quantity of drugs received. Dispensing records must include the date, the name and address of the person to whom the drugs were dispensed, and the kind and quantity of drugs dispensed. Each record must be separately maintained, kept readily available and on hand for *three years.* The records may not be kept is code or in a foreign language. Schedule II substances can only be purchased on official D.E.A. forms from a licensed wholesaler or manufacturer. Other schedule substances may be purchased from wholesalers or manufacturers without D.E.A. forms. In no instance should any controlled substance for office use be purchased using prescription blanks. This means that controlled substances may not be purchased from a pharmacy which does not possess a wholesaler's license.

Record-Keeping and Storage Requirements

Failure to keep any record required may result in a $500.00 fine and if the failure was a deliberate attempt to circumvent the law the fine may be $1,000.00, 30 days imprisonment or both.

Security regulations require that Schedule II drugs must be adequately protected and stored to prevent theft. If a practitioner's supply exceeds 15 units (see Appendix II) of Schedule II and III controlled drugs an approved safe must be obtained for their storage. In no case shall a practitioner's controlled drug stock, no matter how small in amount, be left in an unlocked cabinet, automobile or unattended.

Any loss, destruction or theft of narcotics shall be reported by all registrants within seventy-two hours to the Drug Control Division *and* to the Drug Enforcement Agency on form B.N.D. 106. Requests to destroy excess or undesired controlled drugs shall be made to the Drug Control Division, Department of Consumer Protection (566-4490).

Each practitioner of the healing arts shall report within thirty days to the Commissioner of Health the full name, address and date of birth of every person who, in his opinion, is a drug dependent person upon controlled drugs. as defined in Section 19-443. Practitioners making such reports in good faith shall be immune from any civil or criminal liability that otherwise might be incurred from the making of such report. No such report or the information therein shall be admissible in any criminal prosecution or used for other than rehabilitation, statistical or medical purposes and each such report shall be held confidential by the Commissioner.

Controlled Drug Prescriptions

All prescriptions for controlled drugs shall include:

1. the name and address of the patient, or the name and address of the owner of an animal and the species of the animal.
2. whether the patient is an adult or a child, or his specific age.
3. the compound or preparation prescribed and the amount thereof.
4. directions for use of the medication.
5. the name and address of the prescribing practitioner.
6. the date of issuance.
7. the D.E.A. number of the practitioner.

Prescriptions when written shall be written in ink or in indelible pencil or by typewriter. No duplicate, carbon or photographic copies and no printed or rubber-stamped orders shall be considered valid prescriptions. No prescription or order for any controlled substance issued by a practitioner to an inanimate object or thing such as "office" or "bag" or "emergency kit" shall be considered a valid prescription. Prescriptions for Schedule II substances shall be signed by the prescribing practitioner at the time of issuance and previously signed orders for such Schedule II substances shall not be considered valid prescriptions. Such prescriptions may be refilled, in the case of C-III, C-IV and C-V substances for a maximum of 5 times within a 6 month period when authorized by prescriber, preferably at the time or writing the prescription. The original prescription and refill authorization for C-III, C-IV and C-V substances may be telephoned to the pharmacy.

A prescription for a Schedule II drug cannot be given over the telephone. A prescription *signed* by the physician *must be in the pharmacist's hand* before a Schedule II drug can be dispensed. However, *IN AN EMERGENCY,* a pharmacist may accept a telephone prescription for *an emergency quantity* (the quantity should not exceed the actual amount required to supply the needs of the patient during a 72 hour period) of a Schedule II drug provided the pharmacist knows or confirms the identity of the prescriber, promptly reduces the oral prescription to writing on a prescription blank, incudes all the information required on a Schedule II prescription except the prescriber's signature and immediately files such temporary Rx as required by law. In addition, the prescriber must forward to the pharmacist within 72 hours a signed prescription covering the emergency dispensing. The signed prescription must have written on its face "Authorization for emergency dispensing" and the date of the oral order. The pharmacist must attach the signed prescription to the temporary prescription he prepared and keep both on file as required by law. In the event the prescriber does not forward the signed prescription within 72 hours, the authority to dispense on an oral emergency prescription is deemed void and the pharmacist *must* notify D.E.A. of the prescriber's failure to forward the written prescription.

An emergency is defined by D.E.A. as a situation where:

a. the immediate administration of the controlled substance is necessary; b. no alternative treatment is available and c. it is not reasonably possible for the prescriber to provide a written prescription prior to dispensing.

If the prescriber wishes to prescribe the Schedule II drug *beyond the emergency period,* (the time necessary for the prescriber to reasonably supply the signed prescription) he must write a *separate* prescription to cover that amount and it cannot be dispensed until the pharmacist has the signed prescription in hand.

APPENDIX I
CONTROLLED DRUG LIST

Schedule II: Written prescriptios signed by physician required before dispensing by pharmacist.

1. Narcotic:

    APC with Demerol
    Codeine
    Demerol
    Dilaudid
    Hycodan
    Leritene
    Mepergan
    Mepergan Fortis
    Meperidine
    Morphine
    Cocaine
    Numorphan
    Pantopon
    Percobarb
    Percodan
    Methadone) For
    Innovar) Hospital
    Sublimaze) Use

2. Non-narcotic:

Amphetamine
Amobarbital
Amytal Sodium
Benzedrine
Desoxyn
Dexamyl
Dexedrine
Dextro-Amphetamine
Methamphetamine
Methedrine
Nembutal
Parest
Pentobarbital
Quaalude
Ritalin
Secobarbital
Seconal
Tuinal
Amytal

Schedule III—IV—V: Oral prescription sufficient before dispensing by pharmacist.

1. Narcotic:

Actifed-C Expectorant
Ambenyl Expectorant
APC with Codeine
Brown Mixture
Codempiral
Codesal
Copavin
Dimetane Expectorant-DC
Empirin Comp with Codeine
Fiorinal with Codeine
Hycodan
Hycomine
Lomotil
Nembudeine
Novahistine-DH
Novahistine Expectorant
Paregoric
Phenaphen with Codeine
Phenergan Expectorant with Codeine
Phenergan VC Expectorant with Codeine
Robitussin-AC Expectorant
Stokes Expectorant
Scotussin Forte
Terpin Hydrate with Codeine
Tussar—2
Tussend
Tussionex
Tylenol with Codeine

Note: Any combinations with codeine are controlled drugs, e.g., cough syrups or pain relievers.

2. Non-narcotics:

Alurate
Butabarbital
Buticaps
Butiserpazide
Butiserpine
Butisol
Butizide
Carbrital
Chardonna
Chloral Hydrate
Deprol
Doriden
Equagesic
Equanil
Eskabarb
Ethobral
Fiorinal
Harmonyl-N
Luminal
Mebaral
Mediatric
Meprobamate
Miltown
Nembudonna
Nembugesic
Nembuserpin
Noctec
Noludar
Paraldehyde
Phenobarbital
Placidyl
Plexonal
Somnos

APPENDIX II

A controlled substance *unit* is determined according to the following formula:
one unit equals:

a. 100 tablets or capsules.
b. 1 pint (473 ml) of a liquid not intended for injection.
c. ⅛ ounce (3.58 grams) of a powder, crystal, flake or granule.
d. 1 multiple dose vial of an injectable.
e. 10 suppositories.
f. 10 single-dose ampules, tubexes, dosettes or other single-dose package forms for injection whether as powder or in solution.

DEPARTMENT OF CHILDREN & YOUTH SERVICES

The Department of Children and Youth Services was created by the Connecticut General Assembly in 1969 to deal with juvenile corrections and prevention of delinquency. Since then the responsibilities for social services (1974) and mental health care (1976) for children and youth have been transferred to the Department.

The Department operates Long Lane School in Middletown, the state training facility for delinquent boys and girls committed to the department by the Juvenile Court. Long Lane services include medical and clinical treatment, education, recreation, social services, vocational and job training. It purchases extensive aftercare programs to supervise the rehabilitation of youngsters in community treatment centers. These include group homes, residential schools, foster homes and other professionally supervised living arrangements.

Children's protective and social services are administered by the Department of Children and Youth Services under a purchase of services agreement with the Department of Social Services. The staff accepts and investigates suspected cases of child abuse and/or neglect and works with parents to try to reduce or eliminate the cause of referral. DCYS protective services for abused and/or neglected children include medical assistance, legal aid, family counseling and temporary emergency shelter at the DCYS child care study and receiving home in Warehouse Point, Connecticut. Services also may include the purchase of homemaker, child care and family planning services if not otherwise available. The Department cooperates with the Connecticut Child Welfare Association in providing protective services, including use of the CCWA Child Abuse Careline (1-800-842-2288) for receiving reports of suspected child abuse and/or neglect.

General Statutes 17-38 defines child abuse as physical injury or injuries inflicted by other than accidental means, or injuries at variance with the history given: maltreatment, including but not limited to malnutrition; sexual molestation; cruel punishment, or deprivation of necessary food, clothing or shelter. This Connecticut statute mandates a number of professional groups, including physicians, surgeons, resident physicians, interns, medical examiners and nurses, to report all cases of suspected abuse immediately to State or local police or to the Department of Child and Youth Services, to be followed *within 72 hours by a written report* (Form W-136). Any person mandated to report who fails to report may be fined up to five hundred dollars ($500). Anyone who in good faith reports suspected abuse is granted immunity from civil or criminal liability.

The law provides that any physician examining a suspected abused child has the right to keep such child in the custody of a hospital for up to 96 hours without parental consent. The Department of Child and Youth Services maintains a confidential registry of suspected abused children, which is available at all times to mandated reporters. The expense for temporary care and custody shall be paid by the town.

The 1975 General Assembly made DCYS responsible for the diagnosis, care and treatment of mentally ill and/or emotionally disturbed children and youth. This program is conducted by psychiatric and related specialists at eight in-patient and out-patient facilities: High Meadows (Hamden), Albany Avenue Child Guidance Center (Hartford), Greater Bridgeport Mental Health Center (Bridgeport), the Adolescent Drug Rehabilitation Program (Meriden), the Children's Unit at Connecticut Valley Hospital (Middletown), and adolescent programs conducted by the Mental Health Department under contract with DCYS at Fairfield Hills (Newtown) and at Norwich and Connecticut Valley Hospitals. DCYS also partially funds a number of privately operated child guidance clinics. Plans are also being developed for the utilization of the recently acquired Undercliff Regional Mental Health Center in Meriden which will become a psychiatric hospital for children and adolescents in the fall of 1976.

MEDIC ALERT FOUNDATION

Physicians who receive inquiries concerning identification tags for individuals with medical problems which should be known in an emergency may wish to refer the inquiry to:

Medic Alert
Foundation Headquarters
Turlock, California 95380

Medic Alert — 236-3667
645 Farmington Avenue
Hartford, Conn. 06105

HOSPITAL POISON CONTROL CENTERS IN CONNECTICUT

City	*Name and Address*	*Telephone*	*Director and Assistant Directo*
Bridgeport	Bridgeport Hospital Poison Control Center 267 Grant Street 06602	384-3566	Francis P. A. Williams, M.D. Sally A. Tarick, R.N.
	St. Vincent's Hospital Poison Control Center 2820 Main Street 06606	334-1081	Ramona Byard, M.D.
Danbury	Danbury Hospital Poison Control Center 95 Locust Avenue 06810	744-2300	Louis Rogol, M.D. Mr. Henry Laurent
Middletown	Middlesex Memorial Hospital Poison Control Center 28 Crescent Street 06457	347-9471	Clarence W. Harwood, M.D. L. Annino, Ph.G.
New Britain	New Britain General Hospital Poison Control Center 100 Grand Street 06050	224-5672	Tim Marcham, R. Ph. Asst.
New Haven	The Hospital of St. Raphael Poison Control Center 1450 Chapel Street 06511	772-3900	
	Yale-New Haven Hospital Poison Control Center 789 Howard Avenue 06504	436-1960	Thomas F. Dolan, Jr., M.D. Allan Myers, M.D.
Norwalk	Norwalk Hospital Poison Control Center 24 Stevens Street 06852	838-3611	Melvin Orlins, M.D., (Acting Director)
Waterbury	St. Mary's Hospital Poison Control Center 56 Franklin Street 06702	756-8351	Charles H. Audet, Jr., M.D. Sister Mary Lorraine, Ph.G.

Connecticut State Department of Health
Poison Information Center
Hartford, Connecticut 06115

Estelle Siker, M.D., M.P.H., *Medical Director*
F. Weston Pierce, *Technical Director*

Emergency Telephone 566-3456

THE CONNECTICUT STATE MEDICAL SOCIETY
160 ST. RONAN STREET
NEW HAVEN, CONNECTICUT 06511

OFFICERS — 1976-1977

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Timothy F. Nolan, 49 Lake Avenue, Greenwich 06830
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David A. Grendon, Sharon Hospital, Sharon 06069
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Orvan W. Hess, 29 Old Orchard Road, North Haven 06473	1/1/76-12/31/77
Alternate: Andrew Canzonetti, Scovill Mfg. Co., Waterbury 06706	1/1/76-12/31/77
*E. Tremain Bradley, 31 Stevens Street, Norwalk 06850	1/1/75-12/31/76
*Alternate: Sidney L. Cramer, 21 Woodland Street, Hartford 06105	1/1/75-12/31/76
*J. Alfred Fabro, 94 Church Street, Torrington	1/1/75-12/31/76
*Alternate: Morris A. Granoff, 327 Whalley Avenue, New Haven 06511	1/1/75-12/31/76

*Re-elected for terms 1/1/77-12/31/78

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Edith M. Beck, 56 Lafayette Pl., Greenwich 06830

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William A. Whalen, 150 Mansfield Ave., Willimantic 06226
Associate Councilor: Charles J. Middleton, 39 Broad St., Danielson 06239

Roster of Committees, Representatives and Advisors

Elected by House of Delegates

EDUCATION

Committee On Continuing Medical Education

Vincent A. DeLuca, Jr., 130 Division St., Derby. *Chairman* 06418

Norman Alisberg, Bristol Hospital, Bristol 06010

Thomas T. Amatruda, Jr., Waterbury Hospital, Waterbury 06708

Joseph A. Bardenheier, Wildwood Medical Building, Essex 06426

Donald L. Brown, Hartford Hospital, Hartford 06115

Martin Duke, 26 Haynes St., Manchester 06040

Malcolm M. Ellison, 328 Montauk Avenue, New London 06320

J. Richard Gaintner, New Britain General Hospital, New Britain 06050

Marvin Garrell, 60 Katona Dr., Fairfield 06430

Yale Gordon, 10 Princeton St., Elmwood 06110

William J. Lahey, St. Francis Hospital, Hartford 06105

John G. Murray, Greenwich Hospital, Greenwich 06830

Gerald J. O'Brien, Windham Community Memorial Hospital, Willimantic 06226

Leo M. Smith, Stamford Hospital, Stamford 06902

President, Conn. Medical Examining Board
Charles B. Cheney, 111 Park St., New Haven 06511

President, Society, ex-officio
Hilliard Spitz, 447 Montauk Ave., New London 06320

Committee On Program Of The Scientific Assembly

Michael J. Esposito, 379 Oregon Rd., Meriden, *Chairman* 06450 1972-1977

D. Norman Markley, 422 Farmington Ave., Hartford 06105 1974-1978

Malcolm M. Ellison, 328 Montauk Ave., New London 06320 1974-1979

Frederic I. Fischbein, 80 South Main St., Middletown 06457 1975-1980

James E. C. Walker, University of Connecticut Health Center, Farmington 06032 1976-1981

MEDICAL ECONOMICS

Committee On Insurance

*(F) M. David Deren, 1260 Park Ave., Bridgeport, *Chairman* 06604

Peter A. Arturi, 71 Old Church Rd., Greenwich 06830

*(NH) Saul A. Frankel, 2 Church St. South, New Haven 06519

Marshall Franklin, 17 Old King's Highway, Darien 06820

*(W) David T. Hochberg, 320 Pomfret St., Putnam 06260

Robert H. Jordan, 111 Park St., New Haven 06511

*(H) Robert E. Karns, 29 Haynes St., Manchester 06040

*(T) Seymour I. Kummer, One Ellington Ave., Rockville 06066

*(L) Frank Lovallo, Sharon Medical Arts Center, Sharon 06069

*(NL) Nicholas T. Phillips, 12 Case St., Norwich 06360

Bruce R. Valentine, E. F. Clark Mem. Center, Abington 06230

*(M) Arthur L. Waldman, 269 Main St., Cromwell 06416

*County Nominee

Committee On Professional Liability

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Secretary: Stanislaw A. Milewski, 191 Main Street, Manchester 06040

Section on Orthopedics

Chairman: Martin Karno, 270 Montauk Avenue, New London 06320
Secretary: John D. Haugh, 140 Woodland Street, Hartford 06105

Section on Otolaryngology

President: Robert Rosnagle, 98 York Street, New Haven 06511
Secretary: Ronald J. Pimpinella, Litchfield Road, Torrington 06790

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Chairman: Bertrand P. Bisson, 56 Franklin Street, Waterbury 06702
Secretary: William R. Bronson, Hartford Hospital, Hartford 06115

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Chairman: Frederick J. Flynn, Newington Children's Hospital, Newington 06111
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Secretary: Manuel E. Mino, 119 Lantern Lane, Wethersfield 06109

Section on Preventive Medicine and Public Health

Chairman: J. Howard Johnston, 60 Gillett Street, Hartford 06105
Vice Chairman: Mila E. Rindge, Boston Post Road, Madison 06443

Section on Proctology

President: Bernard J. Kaplan, 21 Woodland Street, Hartford 06105
Secretary: Sanford Savin, 2660 Main Street, Bridgeport 06606

Section on Psychiatry

Chairman: Herbert S. Sacks, 35 East Main Street, Westport 06880
Secretary: Earle L. Biassey, 39 Stonybrook Road, Stratford 06497

Section on Pulmonary Diseases

President: Lester Krasnagor, 190 West Broad Street, Stamford 06902
Secretary: Arthur Kotch, Danbury Hospital, Danbury 06810

Section on Radiology

President: Howard D. Batt, 301 Orchard Street, New Haven 06511
Secretary: Gerald L. Baker, 85 Jefferson Street, Hartford 06106

Section on Surgery

Chairman: Gerald O. Strauch, 70 Mill River Street, Stamford 06902
Secretary: Everitt P. Dolan, 3715 Main Street, Bridgeport 06606

Section on Thoracic and Cardiovascular Surgery

President: Joseph P. Shea, 2660 Main Street, Bridgeport 06606
Secretary: Allan L. Toole, 2 Church Street South, New Haven 06519

Section on Urology

President: Timothy F. Nolan, 49 Lake Avenue, Greenwich 06830
Secretary: Haik Kavookjian, Jr., 555 Newfield Avenue, Stamford 06906

Connecticut Society of American Board Surgeons

President: Gerald O. Strauch, 70 Mill River Street, Stamford 06902
Secretary: Raymond K. Bopp, 150 Mansfield Avenue, Willimantic 06226

ALPHABETICAL LISTING OF TOWNS DESIGNATING COUNTY LOCATION

Town	*County*
Abington	Windham
Amston	New London
Andover	Tolland
Ansonia	New Haven
Ashford	Windham
Avon	Hartford
Baltic	New London
Bantam	Litchfield
Barkhamsted	Litchfield
Beacon Falls	New Haven
Berlin	Hartford
Bethany	New Haven
Bethel	Fairfield
Bethlehem	Litchfield
Bloomfield	Hartford
Bolton	Tolland
Bozrah	New London
Branford	New Haven
Bridgeport	Fairfield
Bridgewater	Litchfield
Bristol	Hartford
Broad Brook	Hartford
Brookfield	Fairfield
Brookfield Center	Fairfield
Brooklyn	Windham
Burlington	Hartford
Byram	Fairfield
Canaan	Litchfield
Canterbury	Windham
Canton	Hartford
Centerbrook	Middlesex
Central Village	New London
Chaplin	Windham
Cheshire	New Haven
Chester	Middlesex
Chestnut Hill	Windham
Clinton	Middlesex
Colchester	New London
Colebrook	Litchfield
Collinsville	Hartford
Columbia	Tolland
Cornwall	Litchfield
Cornwall Bridge	Litchfield
Cos Cob	Fairfield
Coventry	Tolland
Cromwell	Middlesex
Danbury	Fairfield
Danielson	Windham
Darien	Fairfield
Deep River	Middlesex
Derby	New Haven
Devon	New Haven
Durham	Middlesex
Eastford	Windham
East Granby	Hartford
East Haddam	Middlesex
East Hampton	Middlesex
East Hartford	Hartford
East Haven	New Haven
East Lyme	New London
Easton	Fairfield
East Norwalk	Fairfield
East Windsor	Hartford
East Woodstock	Windham
Ellington	Tolland
Elmwood	Hartford
Enfield	Hartford
Essex	Middlesex
Fairfield	Fairfield
Falls Village	Litchfield
Farmington	Hartford
Forestville	Hartford
Franklin	New London
Gales Ferry	New London
Georgetown	Fairfield
Gilman	New London
Glastonbury	Hartford
Glenbrook	Fairfield
Glenville	Fairfield
Goshen	Litchfield
Granby	Hartford
Greens Farms	Fairfield
Greenwich	Fairfield
Griswold	New London
Groton	New London
Guilford	New Haven
Haddam	Middlesex
Hadlyme	New London
Hamburg	New London
Hamden	New Haven
Hampton	Windham
Hawleyville	Fairfield
Hartford	Hartford
Hartland	Hartford
Harwinton	Litchfield
Hazardville	Hartford
Hebron	Tolland
Higganum	Middlesex
Huntington	Fairfield
Jewett City	New London
Kensington	Hartford
Kent	Litchfield
Killingly	Windham
Killingworth	Middlesex
Lakeville	Litchfield
Lebanon	New London
Ledyard	New London
Lisbon	New London
Litchfield	Litchfield
Long Hill	Fairfield
Lyme	New London
Madison	New Haven
Manchester	Hartford
Mansfield	Tolland
Mansfield Center	Tolland
Mansfield Depot	Tolland
Marble Dale	Litchfield
Marlborough	Hartford
Meriden	New Haven
Middlebury	New Haven
Middlefield	Middlesex
Middletown	Middlesex
Milford	New Haven
Monroe	Fairfield
Montville	New London
Moodus	Middlesex
Morris	Litchfield
Morris Cove	New Haven
Mount Carmel	New Haven
Mystic	New London
Naugatuck	New Haven
New Britain	Hartford
New Canaan	Fairfield
New Fairfield	Fairfield
Newfield	Middlesex
New Hartford	Litchfield
New Haven	New Haven
Newington	Hartford
New London	New London
New Milford	Litchfield
New Preston	Litchfield
Newtown	Fairfield
Niantic	New London
Nichols	Fairfield
Noank	New London
Norfolk	Litchfield
Noroton	Fairfield
North Branford	New Haven
Northford	New Haven
North Canaan	Litchfield
North Granby	Hartford
Northfield	Litchfield
North Haven	New Haven
North Madison	New Haven
North Stonington	New London
North Woodbury	Litchfield
Norwalk	Fairfield
Norwich	New London
Norwichtown	New London
Oakdale	New London
Oakville	Litchfield
Old Greenwich	Fairfield
Old Lyme	New London
Old Saybrook	Middlesex
Orange	New Haven
Oxford	New Haven
Pawtucket	New London
Plainfield	Windham
Plainville	Hartford
Plantsville	Hartford
Pleasant Valley	Litchfield
Plymouth	Litchfield
Pomfret	Windham
Poquonock	Hartford
Portland	Middlesex
Preston	New London
Prospect	New Haven
Putnam	Windham
Quaker Hill	New London
Redding	Fairfield
Ridgefield	Fairfield
Riverside	Fairfield
Rockfall	Middlesex
Rocky Hill	Hartford
Rockville	Tolland
Rowayton	Fairfield
Roxbury	Litchfield
Salem	New London
Salisbury	Litchfield
Sandy Hook	Fairfield
Saybrook	Middlesex
Saybrook Pt.	Middlesex
Scotland	Windham
Seymour	New Haven
Sharon	Litchfield

Town	County
Sherman	Fairfield
Shippan Pt.	Fairfield
Silvermine	Fairfield
Simsbury	Hartford
Somers	Tolland
Southbury	New Haven
South Coventry	Tolland
South Glastonbury	Hartford
Southington	Hartford
South Kent	Litchfield
South Manchester	Hartford
South Norwalk	Fairfield
Southport	Fairfield
South Windsor	Hartford
Sprague	Tolland
Springdale	Fairfield
Stafford Springs	Tolland
Stamford	Fairfield
Stepney Depot	Fairfield
Sterling	Windham
Stonington	New London
Storrs	Tolland
Stratford	Fairfield
Suffield	Hartford
Taconic	Middlesex
Taftville	New London
Terryville	Litchfield
Thomaston	Litchfield
Thompson	Windham
Thompsonville	Hartford
Tolland	Tolland
Torrington	Litchfield
Trumbull	Fairfield
Uncasville	New London
Union	Tolland
Union City	New Haven
Unionville	Hartford
Vernon	Tolland
Versailles	New London
Voluntown	New London
Wallingford	New Haven
Wapping	Hartford
Warehouse Pt.	Hartford
Warren	Litchfield
Washington	Litchfield
Waterbury	New Haven
Waterford	New London
Watertown	Litchfield
Westbrook	Middlesex
West Cornwall	Litchfield
West Hartford	Hartford
West Haven	New Haven
Weston	Fairfield
Westport	Fairfield
West Simsbury	Hartford
West Willington	Tolland
Wethersfield	Hartford
Willimantic	Windham
Willington	Tolland
Wilton	Fairfield
Winchester	Litchfield
Windham	Windham
Windsor	Hartford
Windsor Locks	Hartford
Winsted	Litchfield
Wolcott	New Haven
Woodbridge	New Haven
Woodbury	Litchfield
Woodmont	New Haven
Woodstock	Windham

ROSTER OF MEMBERS 1976

Fairfield County Association

President: Laura G. Morgan, 21 Bridge, Stamford 06905
Vice-President: Jack T. Orr, Danbury Hospital, Danbury 06810
Secretary: Ralph L. Parker, 881 Lafayette, Bridgeport 06603
Treasurer: H. David Frank, 114 State, Bridgeport 06603
Councilor: Edward A. Kamens, 1305 Post Rd. Fairfield 06430

Associate Councilors:
John J. McGarry, 36 Old King's Hwy, South, Darien 06820
Edith M. Beck, 56 Lafayette Pl., Greenwich 06830

Executive Secretary: Mr. Gregory A. Martel
Executive Office: 60 Katona Dr., Fairfield 06430
Annual Meeting, Second Tuesday in April
Semi-Annual Meeting, First Wednesday in October

BETHEL 06801

1974 Binnie, Hugh Sharp Polson, 236 Greenwood Ave.
1945 Mandl, George, 234 Greenwood Ave.
1938 Trimpert, Albert Joseph, 8 Blackman Ave.
1939 Wolfson, Dexter, 14 Grassy Plain

BRIDGEPORT

1974 Adefuin, Zosimo Adea, 1475 Barnum Ave. 06610
1975 Aleali, Syed Hossain, St. Vincent's Hospital 06606
1965 Alexander, James Maurice, 50 Ridgefield Ave. 06610
1932 Alpert, Max, 881 Lafayette 06603
1944 Amarant, Leo, 881 Lafayette 06603
1975 Ambrose, Paul, 2472 East Main 06610
1953 Anderson, Harry Brutus, 1239 Main 06604
1942 Apuzzo, Anthony Albert, 2660 Main 06604
1973 Armm, Milton F., 1438 Park Ave. 06604
1971 Auerbach, Sumner Robert, 50 Ridgefield Ave. 06610
1973 Bader, Lewis Martin, 881 Lafayette 06604
1916 Banks, Daniel Tony, 385 Barnum Ave. 06608
1968 Barrero, Ezequiel Fernandez, 401 Noble Ave. 06608
1957 Bayless, Allan Eugene, 50 Ridgefield Ave. 06610
1941 Beck, Sidney Henry, 51 Golf View Ter. 06603
1974 Beres, Milan, 50 Ridgefield Ave. 06610
1970 Berkun, Sumner Gerald, 881 Lafayette Blvd 06604
1913 Bernstein, Abraham, 881 Lafayette 06603
1956 Bernstein, Jerome, 340 Capitol Ave. 06606
1961 Berry, Robert W., 2075 North Ave. 06604
1969 Bersier, Andre Marc, 2660 Main 06606
1928 Biehn, Sidney Lister, 130 Pinepoint Dr. 06606
1946 Birney, Thomas Peter, 1984 Park Ave. 06604
1949 Blaney, Cyril Chandler, 3202 Main 06606
1952 Blank, Miriam Bennett, 420 Brooklawn Ave. 06604
1963 Blank, Victoria E., 3321 Park Ave. 06604
1935 Bogin, Maxwell, 340 Capitol Ave. 06606
1973 Boreyko, Christopher Joseph, 3715 Main 06606
1963 Borsos, Lajos A., 965 Fairfield Ave. 06605
1954 Bousa, Walter Shackley, 3163 Main 06606
1959 Bradley, Edward Grenelle, 50 Ridgefield Ave. 06610
1947 Braun, Rudolf, 525 Clinton Ave. 06605
1971 Bravo, Anthony John, 50 Ridgefield Ave. 06610
1975 Breyan, Nicholas Richard, 50 Ridgefield Ave. 06610
1941 Brier, Hyman David, 2574 Main 06606
1940 Brooks, Paul Lester, 1260 East Main 06608
1974 Brown, Paul Woodrow, St. Vincent's Hospital 06606
1955 Burke, William Harris, 1026 Park Ave. 06604
1969 Byard, Ramona Marie, St. Vincent's Hospital 06606
1943 Cacace, Vincent Anthony, 1438 Park Ave. 06604
1975 Calabrese, Carmine Timothy, 2660 Main 06606
1947 Camarda, Anthony L., 690 Clinton Ave. 06604
1968 Canter, Norman Michael, 50 Ridgefield Ave. 06610
1945 Capobianco, Arthur Paul, 508 Noble Ave. 06608
1962 Capodilupo, Vincent Michael, 754 Clinton Ave. 06604
1946 Cardone, Michael James, 2989 Main 06606
1974 Carolan, Patrick James, 3715 Main 06606
1932 Carroll, Philip Roger, Jr., 1131 Noble Ave. 06608
1947 Caserta, Silvio Joseph, 880 North Ave. 06606
1947 Cavaliere, Vincent J., 798 North Ave. 06606
1973 Chadda, Shashi K. B., St. Vincent's Hospital 06606
1975 Chinniah, Anton V., 50 Ridgefield Ave. 06610
1949 Chiota, Joseph A., 562 Boston Ave. 06610
1975 Choksi, Yogesh Harshadlal, 114 State 06604
1954 Cleaver, Robert S., Jr., 50 Ridgefield Ave. 06610
1976 Cocco, Thomas D., 388 Brooklawn Ave. 06604
1959 Cohen, Stanley Leonard, 1026 Park Ave. 06604
1952 Connell, Thomas Hilbert, Jr., 50 Ridgefield Ave. 06610
1959 Cook, William Henry, 2660 Main 06606
1967 Cooney, Gerald Evans, 3163 Main 06606
1954 Corley, Eugene Henry, 1026 Park Ave. 06604
1963 Corso, Philip Francis, 2660 Main 06606
1963 Creatura, John Anthony, 50 Ridgefield Ave. 06610
1947 Curley, William Henry, Jr., 3715 Main 06606
1971 D'Aiuto, Michael Leonard, 50 Ridgefield Ave. 06610
1972 Dalal, Bipinchand Jivanchand, 695 Park Ave. 06604
1950 Dean, Michael Augustine, 2660 Main 06606
1972 DeBernardo, Robert Louis, 3715 Main 06606
1976 DeBonis, Gerald Michael, 3715 Main 06611
1952 DeLibero, Anthony F., 698 Capitol Ave. 06606
1950 DeLuca, Joseph Vincent, 251 North Ave. 06606
1947 Deren, M. David, 1260 Park Ave. 06604
1954 Doering, Robert Warren, 1836 Noble Ave. 06610
1976 Dogali, Michael, 2660 Main 06606
1958 Doherty, Harold Edward, 3175 Main 06606
1958 Dolan, Everitt Patrick, 3715 Main 06606
1963 Donnelly, Vincent Peter, 782 Clinton Ave. 06604
1945 Donnelly, William Augustus, 2112 North Ave. 06604
1954 Dugas, Joseph Albert, 660 Kossuth 06608
1941 Duzmati, Paul Peter, 1904 Boston Ave. 06610
1963 Dworken, Donald Savin, 50 Ridgefield Ave. 06610
1954 Eckels, Howard Samuel, 4747 Main 06606
1937 Eimas, Aaron, 340 Capitol Ave. 06606
1970 Eisenberg, Joel Howard, 4749 Main 06606
1948 Elliott, Frank George, Jr., Bridgeport Hospital 06610
1963 Engel, Harry Paul, 50 Ridgefield Ave. 06610
1971 Eras, Philip, 3715 Main 06606
1976 Escobar, Santiago, 2837 Main 06606
1939 Esposito, Joseph John, 50 Ridgefield Ave. 06610
1968 Fazzone, Andrew Christian, 148 Mill Hill Ave. 06610

1973 Federico, Frank Nicholas, 3715 Main 06606
1969 Feldman, Morton George, 881 Lafayette 06603
1961 Feldman, Saul Morry, 3715 Main 06606
1961 Feroleto, George Joseph, 1660 Park Ave. 06604
1956 Flagg, James Anthony, Bridgeport Hospital 06610
1965 Fleisher, Philip, 1438 Park Ave. 06604
1969 Flemister, Adolph Samuel, 944 Fairfield Ave. 06605
1938 Foley, Frances Xavier, 2660 Main 06606
1957 Fox, Henry John, 10 Washington Ave. 06604
1954 Frank, Howard David, 114 State 06603
1956 Frenkel, Henry Hans, 827 North Ave. 06606
1958 Fromm, Stanley M., 260 Main 06606
1968 Gacso, William Julius, 2820 Main 06606
1974 Gargano, Paul Andrew, 114 State 06604
1956 Gariepy, John Arthur, 50 Ridgefield Ave. 06610
1968 Garofalo, George Anthony, 30 DeRamo Pl. 06606
1976 Garver, Eric Michael, 4749 Main 06606
1951 Geanuracos, George James, 50 Ridgefield Ave. 06610
1974 Gianetti, Charles Donald, 3715 Main 06606
1975 Gianetti, David, 3715 Main 06606
1927 Gildea, Mark Andrew, 2600 Park Ave. 06604
1957 Gill, Nicholas Patrick, 50 Ridgefield Ave. 06610
1962 Glass, Mac Ellis Kopel, 50 Ridgefield Ave. 06610
1948 Glass, William I., 881 Lafayette 06603
1950 Goodrich, Albert, 50 Ridgefield Ave. 06610
1946 Goodrich, William J., 3120 Fairfield Ave. 06605
1956 Gordon, Benjamin Dichter, Bridgeport Hospital 06610
1974 Gossart, Robert Marius, 782 Clinton Ave. 06604
1976 Granger, Donald Peter, 50 Ridgefield Ave. 06610
1955 Grant, James Mullett, 3715 Main 06606
1973 Grayer, David I., 4747 Main 06606
1916 Griffin, Daniel Patrick, 3030 Park Ave. 06606
1943 Grossman, John Henry, 144 Golden Hill 06603
1941 Gulash, John Robert, 562 Boston Ave 06610
1949 Guttman, Tibor, 1549 Fairfield Ave. 06605
1975 Haghighat, Ahmad, 2820 Main 06606
1967 Hanley, Hilda Christina, 2660 Main 06606
1963 Harshbarger, James E., 50 Ridgefield Ave. 06610
1972 Hau, Kee-Hung, 50 Ridgefield Ave. 06610
1975 Heller, Charles I., 50 Ridgefield Ave. 06610
1970 Heller, Warren, 3715 Main 06606
1975 Hemenway, Charles Gerald, 340 Capitol Ave. 06606
1938 Hennessey, Joseph Gerard, 482 Brewster 06605
1975 Herman, Myer, City Health Dept. 06608
1975 Hill, Paul Raymond, 3411 Main 06606
1961 Homza, L. Ronald, 2660 Main 06606
1963 Hope-Ross, Peter Edward, 695 Park Ave. 06604
1933 Horn, Benjamin, 3900 Park Ave. 06604
1946 Horowitz, Isaac, 881 Lafayette 06603
1955 Horowitz, Joseph Lewis, 2616 Main 06606
1956 Inder, Harry Albert, 4747 Main 06606
1972 Iodice, Michael Thomas, 50 Ridgefield Ave. 06610
1956 Ireland, Elwood Fremont, Jr., 50 Ridgefield Ave. 06610
1962 Jamshidi, Ahmed, 1475 Barnum Ave. 06610
1962 Johnson, George Blake, Jr., 2952 Main 06606
1942 Kaplan, Leon, 881 Lafayette 06603
1960 Kasper, Richard Francis, 2085 Madison Ave 06606
1969 Kauders, James Theodore, 2616 Main 06606
1967 Kay, Chester J., 881 Lafayette Blvd. 06604
1969 Kelleher, Michael Joseph, 2660 Main 06606
1974 Kim, Kwi Sook Choi, 50 Ridgefield Ave. 06610
1946 Kleinman, Harold Louis, 2051 North Ave. 06604
1948 Kogut, Henry Vincent, 50 Ridgefield Ave. 06610
1970 LaMastra, Philip Michael, 267 Grant 06602
1964 Landwirth, Julius, Bridgeport Hospital 06610
1961 Lapinski, Lucian Stanley, 881 Lafayette 06603
1962 Lawrence, John James, 2660 Main 06606
1962 Lebowitz, Wallace Bernard, 2660 Main 06606
1974 Lee, Hee Jong, 226 Mill Hill Ave. 06610
1963 Lee, Nam Hyung, 267 Grant 06610
1959 Leone, Paul Vincent, 50 Ridgefield Ave. 06610
1943 Lesko, Joseph Michael, 144 Golden Hill 06603
1933 Levinsky, Maurice, 1425 Noble Ave. 06610
1956 Levy, Theodore Steinberg, 2616 Main 06606
1972 Lewin, Marvin Lionel, 50 Ridgefield Ave. 06610
1970 Lewis, William Stanley, 837 Fairfield Ave. 06604
1973 Lisi, Kenneth Ronald, 29 Federal 06606
1961 Lobdell, David Hill, St. Vincent's Hospital 06606
1942 Lopatin, Colman, 971 Fairfield Ave. 06605
1973 Lovanio, Richard Gabriel, 3715 Main 06606
1975 Lucia, Walter, 2660 Main 06606
1948 Luciano, Michael Charles, 2089 North Ave. 06604
1947 Lynch, Vincent Aloysius, 798 North Ave. 06606
1944 Lyon, Grover Arthur, 2009 North Ave. 06604
1975 Mack, Jane Andrews, 815 Penbroke 06608
1955 Madwed, Alice Ente, 25 Saxton Dr. 06604
1976 Maiocci, Kenneth Joseph, 4749 Main 06606
1957 Malyska, Francis Anthony, 4747 Main 06606
1971 Mangieri, John Vito, 50 Ridgefield Ave. 06610
1955 Maniatis, William Richard, 881 Lafayette 06603
1956 Manjoney, Robert John, 2616 Main 06606
1958 Manjoney, Vincent August, 3715 Main 06606
1949 Markley, Ludwig Louis, 2660 Main 06606
1969 Marks, Eugene M., 939 Barnum Ave. 06602
1966 Marrash, Samir E., 2075 North Ave. 06604
1951 Martelon, George Fred, 1285 Boston Ave. 06602
1941 Martin, Raymond Alfred, 50 Ridgefield Ave., 06610
1972 Masi, Anthony Vincent, 4695 Main 06606
1942 Massey, Daniel M., Bridgeport Hospital 06610
1965 McCullough, Charles Discant, 3163 Main 06606
1952 McGarry, John F., 50 Ridgefield Ave. 06610
1974 McKnight, William Kuhn, 1635 Central Ave. 06610
1967 McLoughlin, Peter Joseph, 1984 Park Ave. 06604
1952 Meltzer, Saul B., 2660 Main 06606
1970 Mergenthaler, Francis William, 2075 North Ave. 06604
1946 Meshken, Jacob, 2800 Main 06606
1964 Methot, Lawrence Gerard, 3715 Main 06606
1964 Michaels, Arthur Hatzi, 2167 North Ave. 06604
1961 Michalka, Joseph John, 114 State 06603
1947 Molnar, George J., 135 Brooklawn Ave. 06604
1932 Mooney, Sydney, 881 Lafayette 06603
1946 Morris, Felix R., 953 East Main 06608
1973 Musto, Anthony, 50 Ridgefield Ave. 06610
1948 Nagourney, David, 1756 East Main 06610
1948 Newman, Abbott A., 2660 Main 06606
1957 Niesyn, Erwin, 50 Ridgefield Ave. 06610
1954 Noonan, Robert Henry, 385 Noble Ave. 06608
1947 Northman, Frank Fred, 753 Lakeside Dr. 06606
1968 Oesau, Harold Thomas, Jr., 50 Ridgefield Ave. 06610
1947 O'Looney, John J., Jr., 1075 Noble Ave. 06608
1948 Olsavsky, John Cyril, 10 Washington Ave. 06604
1944 Oster, Kurt A., 881 Lafayette 06603
1947 Owens, Andrew Paul, 50 Ridgefield Ave. 06610
1940 Panettieri, Andrew Joseph, Bridgeport Hospital 06610
1974 Park, Yong Joon, 50 Ridgefield Ave. 06610
1942 Parker, Ralph Layton, 881 Lafayette 06603
1937 Pascal, Thomas J., 1560 Noble Ave. 06610
1944 Pasquariello, D. William, 2969 Main 06606
1975 Pathak, Jitendra Ambalal, 114 State 06604
1975 Pathak, Kunja Jitendra, 114 State 06604
1940 Penner, Sidney Lincoln, 158 Mill Hill Ave. 06610
1964 Peralta, Carlos, 881 Lafayette 06603
1970 Perlman, Jerold M., 50 Ridgefield Ave. 06610
1972 Pesce, Joseph Raymond, 3715 Main 06606
1975 Pineiro, Eberto, 2660 Main 06606

1970 Pleban, Walter Edward, 50 Ridgefield Ave. 06610
1953 Pope, Russell, Bridgeport Hospital 06610
1968 Portnoy, Lewis Morton, 695 Park Ave. 06604
1968 Pua, Purificacion, 50 Ridgefield Ave. 06610

1958 Ragusa, Robert Paul, 4747 Main 06606
1975 Ramachandran, MyLvaganam, 114 State 06604
1963 Ramirez, Louis Manuel, 754 Clinton Ave. 06604
1970 Rapoport, Melvyn, 50 Ridgefield Ave. 06610
1972 Reichgut, Martin H., 3715 Main 06606
1942 Resnik, Harry, 26B Greenhouse Rd. 06606
1950 Riccio, Frank Joseph, 923 East Main 06608
1967 Roach, James Patrick, 3715 Main 06606
1975 Robbins, David I., 28 Main 06606
1976 Rockwell, William James, 1984 Park Ave. 06604
1961 Rosenbaum, Nathan, 4747 Main 06606
1944 Rosenberg, Hans August, 425 Beechwood Ave. 06604
1959 Rosenberg, Murray Alan, 881 Lafayette 06604
1946 Rosenberg, Saul, 1950 Park Ave. 06604
1974 Rosman, Martin, 50 Ridgefield 06610
1946 Rosner, Fred, 2333 North Ave. 06604
1974 Ruangyuttikarn, Wittaya, 215 Ridgefield Ave. 06610
1973 Rusch, Ortwin Ferdinand, 2820 Main 06606
1949 Russo, John Rocco, 3296 Main 06606
1948 Russo, Robert Dante, 10 Washington Ave. 06604
1975 Russo, Robert Dante, Jr., 30 Anchorage Dr. 06605

1949 Saidel, Joseph W., 932 East Main 06608
1976 Salvio, Daniel Gennoro, 401 Noble Ave. 06608
1954 Samuelson, Arthur Wesley, 50 Ridgefield Ave. 06610
1958 Santella, Salvatore Michael, 2210 Park Ave. 06604
1975 Santilli, John, Jr., 4695 Main 06606
1963 Saraczynski, Daniel Leon, 2001 Park Ave. 06604
1948 Savin, Sanford, 2660 Main 06606
1971 Sax, Robert Eugene, 782 Clinton Ave. 06604
1942 Scalzi, Leonard Conrad, 924 Noble Ave. 06608
1967 Scavo, Vincent Joseph, 3715 Main 06606
1972 Schare, George David, 340 Capitol Ave. 06606
1975 Schlein, Allen P., 837 Fairfield Ave. 06604
1954 Sciarrillo, Joseph John, 3354 Main 06606
1938 Sekerak, Richard John, 1400 East Main 06608
1976 Senathirajah, K. T., 50 Ridgefield Ave. 06610
1968 Shah, Urmila C., 881 Lafayette 06603
1968 Shanley, Walter Thomas, 4749 Main 06606
1948 Shea, Joseph Patrick, 2075 North Ave. 06604
1972 Sheiman, Robert Aaron, 370 Capitol Ave 06606
1946 Sheiman, Samuel Charles, 1539 Park Ave. 06604
1947 Sherman, Irving J., 2660 Main 06606
1972 Shimkin, Peter Michael, 50 Ridgefield Ave. 06610
1944 Sholler, Nicholas A., 2148 North Ave. 06604
1975 Sica, Vincent Frank, 881 Lafayette Blvd. 06604
1971 Silverman, Donald Richard, 3715 Main 06606
1958 Simkovitz, Jaime, 754 Clinton Ave. 06604
1968 Simpson, John Arthur, 1285 Boston Ave. 06602
1939 Simses, John Peter, 1151 Park Ave. 06604
1976 Simses, John Peter, Jr., 1151 Park Ave. 06604
1950 Small, Alan Robert, 4747 Main 06606
1962 Small, John Howard, 50 Ridgefield Ave. 06610
1963 Sorge, Dominick Vincent, St. Vincent's Hospital 06606
1960 Souvlis, Charalambos D., 881 Lafayette 06603
1971 Stallworth, Vera Martin, 2625 Park Ave. 06604
1971 Steremberg, Zuli, 29 Federal 06606
1949 Stevens, John Sutehall, 1438 Park Ave. 06604
1964 Stiff, David Parker, St., Vincent's Hospital 06606
1973 Stotts, H. Lyle, Bridgeport Hospital 06610
1976 Sullivan, Barbara E., Park City Hospital 06604
1952 Sullivan, John Lawrence, 50 Ridgefield Ave. 06610
1975 Sulzycki, M. Michael, St. Vincent's Hospital 06606

1973 Taubin, Howard Leslie, 114 State 06603
1953 Thurmond, James Ernest, 50 Ridgefield Ave. 06610
1976 Torstenson, Guy E., St. Vincent's Hospital 06606
1947 Turetsky, Samuel, 2357 Fairfield Ave. 06605

1943 Unger, Milton, 923 East Main 06603
1932 Uvitsky, Irving Harry, 3101 Main 06606

1971 Vallone, Anthony Joseph, 4749 Main 06606
1976 Van Der Aue, George Lane, 2820 Main 06606
1966 van der Veen, Teunis, Bridgeport Hosp. 06610
1967 Vincent, Norman Robert, 10 Washington Ave. 06604
1941 Vioni, R. Edward, 3450 Main 06606

1955 Walsh, James Francis, III, 2660 Main 06606
1948 Walzer, Eugene Harold, 540 Clinton Ave. 06604
1942 Ward, James P., 881 Lafayette 06603
1951 Wasserman, Edward, 881 Lafayette 06603
1968 Wasson, Dennis, 50 Ridgefield Ave. 06610
1971 Weglarz, Stanley S., 1475 Barnum Ave. 06610
1973 Weinstein, Alan Harvey, 50 Ridgefield Ave. 06610
1965 Weinstein, Albert, 340 Capitol Ave. 06606
1958 Weinstein, Norman, 340 Capitol Ave. 06606
1948 Weise, Ellwood Carl, Jr., 50 Ridgefield Ave. 06610
1946 Williams, Francis Pryor Anthony, 155 Brewster 06605

1973 Yu, Henry Chun-Chiang, 2660 Main 06606
1969 Zingmond, Erwin, 4697 Main 06606
1943 Zsiga, Elmo Douglas, 303 Clinton Ave. 06605
1975 Zuckerman, Howard Leonard, 3715 Main 06606

BROOKFIELD 06804

1967 Bowen, Willet Raynor, Route 7
1975 Buscemi, Arthur A., The Pillars RFD #4
1968 DiGrazia, Paul Vincent, Route 7
1971 Foye, Gerald John, Brookfield Prof. Bldg., Rt. 7
1973 Kayal, Frederick Abraham, Brookfield Prof. Ctr.
1975 Nesi, Roland Michael, Brookfield Professional Center
1970 Soletsky, Harry B., Brookfield Prof. Ctr.

COS COB 06807

1940 Bria, William Francis, Diamond Hill
1959 Clayton, James Augustus, Clover Pl.
1965 Garb, Allan E., 49 Dandy Dr.
1963 Koenig, Allen Russell, 78 Dandy Dr.
1952 Murphy, John Philip, 8 Sinaway Rd.
1967 Suerig, Karl Christian, Mimosa Dr.

DANBURY

1964 Albanese, Antonio Nicola, 13 Hospital Ave. 06810
1962 Azar, Marcel A., 111 West 06810
1963 Badan, Bohodar, Danbury Hospital 06810
1963 Balmaseda, Rene Y., Danbury Hospital 06810
1973 Balsam, Stephen J., 92 Locust Ave. 06810
1958 Barese, Angelo Mario, 95 Locust Ave. 06810
1953 Barysh, Noah, 93 West 06810
1976 Beaudoin, James Ronald, 6 Walnut 06810
1973 Berger, David S., 24 Hospital Ave. 06810
1951 Blansfield, Henry Nelson, 46 Federal Rd. 06810
1947 Burnie, George A., 105 Main 06810
1975 Burris, John Ovie, Glen Hill Rd. 06810
1976 Casazza. Albert Raymond, Glen Hill Rd. 06810
1952 Castro, Roger Perez, 136 South 06810
1952 Cherry, Joseph Bentley, 46 Federal Rd. 06812
1976 Cohen, Herbert George, Linden Crest Dr. 06810
1961 Coleman, Paul Joseph, 92 Locust Ave. 06810
1965 Daniels, John C., Danbury Hospital 06810
1959 Dawe, Edwin Lloyd, 8 West 06810
1942 DeKlyn, Ward B., 177 Main 06810
1947 Edson, Dean Harding, 2 Hospital Ave. 06810
1947 Epstein, Benjamin, 8 Locust Ave. 06810

1975 Exconde, Fidel V., Jr., 16 Hospital Ave. 06810
1974 Falkenstein, Ralph Jay, Danbury No. Shopping Center 06810
1967 Fand, Robert, 79½ North 06810
1963 Fernand, Edwin George, 46 Federal Rd. 06812
1973 Fischl, Robert A., 16 Hospital Ave. 06810
1959 Fornshell, Robert Pearce, 85 Osborne 06810
1931 Gaffney, John James, 215 Main 06810
1958 Gianfranceschi, Guido Richard, 35 Tamarack Rd. 06812
1972 Glucksman, Myron Lawrence, 92 Locust Ave. 06810
1960 Goldberg, Morley Moses, 84 Locust Ave. 06810
1958 Goldman, Alvin, 84 Locust Ave. 06810
1974 Goldstein, Leonard Harry, 84 Locust Ave. 06810
1969 Goldstein, William B., 95 Locust Ave. 06810
1929 Goldys, Frank Max, 209 Main 06810
1957 Greenfield, Michael, Danbury Shopping Center, North 06810
1954 Gryce, Walter I., 30 Hospital Ave. 06810
1960 Herrera, Nilo Ernesto, Danbury Hospital 06810
1973 Hines, Ann Hanahoe, 82 South 06810
1968 Homer, Donald R., Danbury Hospital 06810
1954 Hubbard, Richmond Chase, 59 Main 06810
1957 Jameson, Marjorie Elizabeth, 18 Fairview Ave. 06810
1957 Jameson, Thomas Peter, 18 Fairview Ave. 06810
1953 Jovell, John William, 46 Main 06810
1954 Joy, Robert Chamberlain, 30 Driftway Rd. 06810
1974 Keller, Barry Roy, 84 Locust 06810
1960 Kenter, Ali Mahmut, 46 Federal Rd. 06812
1963 Kilhenny, Charles, 2 Hospital Ave. 06810
1976 Kotch, Arthur, Glen Hill Rd. 06810
1960 Kuczko, Edward Paul. Powell, Aqua Vista 06810
1974 LaGratta, Roger John, 85 Osborne 06810
1954 Machcinski, Victor Anthony, Danbury Shopping Center 06810
1976 Magavi, Shivayogi V., 58 Division 06810
1970 Malloy, Thomas McKevitt, 85 Osborne 06810
1965 Manlapaz, Jesse Schmidt, 70½ West Plaza 06810
1975 Mashman, Jan Howard, 16 Hospital Ave. 06810
1976 Masry, Ibrahim Sabry, 50 Clapboard Ridge Rd. 06810
1962 Mauks, Charles William, 79 West 06810
1957 McDermott, John Joseph, 54 Main 06810
1958 Miller, Robert George, 70½ West Plaza 06810
1976 Morrison, Mary Jane, Danbury Hospital 06810
1961 Orr, Jack Thomas, Danbury Hospital 06810
1974 Patil, Vijay M., 120 Chambers Rd. 06810
1949 Patterson, Harold Calvin, 93 West 06810
1976 Pezzimenti, John Francis, Glen Hill Rd., 06810
1970 Prince, Marvin Lawrence, 16 Hospital Ave. 06810
1972 Raff, Ira L., Richter Dr. 06810
1949 Randolph, Martin Francis, 70 Deer Hill Ave. 06810
1975 Ripps, Ronald A., 30 Hospital Ave. 06810
1937 Rogol, Louis, 11 Dogwood Dr. 06810
1971 Rose, Turpin Harry, 432 Main 06810
1951 Rosenberg, Bernard L., 35 Tamarack Ave. 06810
1975 Rosenthal, Elizabeth Robbins, 35 Tamarack Ave. 06810
1964 Rubin, L. Robert, 84 Locust Ave. 06810
1947 Ruiz, Rolando R., 77 West 06810
1975 Sanchez, Rogelio, 92 Locust Ave. 06810
1976 Saperstein, Stanley, Glen Hill Rd. 06810
1967 Saunders, Francis Peter, 85 Osborne 06810
1958 Schwartz, Raphael David, 92 Locust Ave. 06810
1973 Sellner, Henry Ascher, 84 Locust Ave. 06810
1965 Shafto, William Alan, 18 Fairview Ave. 06810
1970 Sherman, Warren T., Glen Hill Rd. 06810
1958 Silvert, David Sidney, 113B Deerhill Ave. 06812
1965 Simonelli, Joseph Michael, 2 Hospital Ave. 06810
1953 Sinton, William Anthony, 85 Osborne 06810
1951 Sokolski, Edward John, 35 Tamarack Ave. 06812
1975 Speth, C. Peter, 44 East Pembroke Rd. 06810
1958 Staffieri, Salvatore, 116 Main 06810
1932 Tomaino, Felix Francis, 85 West 06810
1963 Tomaino, Pietro, 44 Davis 06810
1965 Upton, Emily Frances, 17 Jeanette Rd. 06812
1957 Van Syckle, Guy Weaver, 30 Hospital Ave. 06810
1972 Weiner, Jay, 92 Locust Ave., Danbury 06810
1975 Whitney, Alden E., 67 Long Ridge Rd. 06810
1970 Zimmer, Alan E., 95 Locust Ave. 06810
1971 Zolov, David Mitchell, 83 West 06810

DARIEN

1961 Allard, Gilles Guy, 20 Wilson Ridge Rd. 06820
1951 Brown, David Arthur, 210 Brookside Rd. 06820
1974 Brown, Spencer Franklin, P.O. Box 1073 06820
1973 Bull, Marcia B., Dew La. 06820
1964 Dorr, James Richard, 36 Old King's Hwy. South 06820
1964 Franklin, Marshall, 17 Old King's Hwy. South 06820
1955 Gammill, James Flaude, 767 Post Rd. 06820
1960 Harness, John Henry, 2701 Boston Post Rd., 06820
1954 Hughes, George Stevenson, 10 Nickerson La. 06820
1953 Kavookjian, Haik, Jr., 62 Stanton Rd. 06823
1968 Krauthamer, Martin Joel, 17 Old King's Hwy. South 06820
1962 Kremer, Carl Peter, Jr., 8 Ring's End Rd 06822
1955 Macgregor, James Verry, 2 Queens La. 06820
1954 McGarry, John Joseph, 36 Old King's Hwy. South 06820
1956 Ralph, Fenn T., P. O. Box 1162 06820
1966 Schoenwald, Herman R., 298 Brookside Rd. 06820
1975 Skolnick, Stanley Richard, 17 Old King's Hwy South 06820
1960 Squattrito, Umberto, 17 Old King's Hwy. South 06820
1971 Tobin, John Joseph, 17 Old King's Hwy. South 06820
1976 Yap, Jesus F., Jr., 17 Old King's Hwy. South 06820

EAST NORWALK 06855

1938 Corridon, James Donald, 194 East Ave.
1954 Csovanyos, Laszlo, 200 East Ave.
1973 Dalal, Bharat Jayant, 108 East Ave.
1948 Ippolito, Thomas Leonard, Pine Hill Ave.

EASTON 06425

1951 Chick, Forris Beechan, 171 Sport Hill Rd.
1974 Kim, Yu Hong, Ferndale Rd.
1966 O'Neil, Thomas Joseph, 52 Hall Rd.
1952 Ryan, James Edward, 750 Sport Hill Rd.
1935 Smith, Joseph Jacob, 394 Sport Hill Rd.

FAIRFIELD

1969 Abrams, Harold, 1305 Post Rd. 06430
1963 Axiotis, Anthony Hippocrates, P.O. Box 566 06430
1944 Barker, Daniel C., 133 Reef Rd. 06430
1951 Baum, Seymour James, 1305 Post Rd. 06430
1939 Biehn, Donald M. Frick, 47 Parkway 06430
1963 Blum, Lawrence Michael, 1700 Post Rd. 06430
1970 Burd, Robert M., 1305 Post Rd. 06430
1975 Casey, Thomas Ray, 3135 Easton Tpke 06431
1940 Castaldo, Louis F., 130 Old Oaks Rd. 06432
1973 Chumnanvech, Nongnuch L., P.O. Box 1172

1967 Clift, George Vincent, 325 Reef Rd. 06430
1973 Cohen, Ivan S., 1305 Post Rd. 06430
1973 Cohen, William B., 1305 Post Rd. 06430
1969 Coolidge, Melvin P., 1305 Post Rd. 06430
1957 Cooper, Milton, 1305 Post Rd. 06430
1973 D'Apice, Joseph Patrick, 545 Mill Plain Rd. 06430
1957 D'Elia, Frank G., P.O. Box 207, 765 Post Rd. 06430
1921 DeWitt, Edward Nicholas, 3129 Burr 06432
1949 Edwards, Larry Edwin, 1410 Mill Plain Rd. 06430
1974 Feuer, Paul Michael, 1305 Post Rd. 06430
1957 Flom, Leonard, 1903 Post Rd. 06430
1953 Gaffney, Robert Edward, 325 Reef Rd. 06430
1959 Gardner, Charles Wesley, Jr., 100 Verna Hill Rd. 06431
1950 Gardner, Sidney M., 172 Curtis Ter. 06604
1954 Garrell, Marvin, 60 Katona Dr. 06430
1968 Gaynes, Philip Martin, 1903 Post Rd. 06430
1971 Gill, Alan Jay, 1305 Post Rd. 06430
1971 Grossman, Edward T., 1305 Post Rd. 06430
1968 Hankin, Edwin, 1305 Post Rd. 06430
1944 Harris, H. Patterson, Jr., Town Hall 06430
1972 Herbin, Joseph Thomas, 60 Katona Dr. 06430
1963 Higgins, Kenneth Elliot, 325 Reef Rd. 06430
1973 Hobbie, Robert J., 400 Stillson Rd. 06430
1959 Hoffman, William Albert, 1305 Post Rd. 06430
1975 Jay, Harvey Herschel, 1700 Post Rd. 06430
1957 Jonas, Gordon Quincy, 1700 Post Rd. 06430
1943 Jones, Elwood King, 20 Old Barn Rd. 06430
1947 Joslin, Stuart L., 1305 Post Rd. 06430
1958 Kamens, Edward A., 1305 Post Rd. 06430
1971 Kapp, Philip A., Box 1172 06430
1973 Katz, Stephen R., 1700 Post Rd. 06430
1948 Kaufman, Maurice, 94 Golf View Ter. 06430
1973 Kelly, George Philip, 160 Fairfield Woods Rd. 06430
1948 Kemp, Edward P., 178 Reef Rd. 06430
1948 Kenigsberg, Nathaniel, 55 Skytop Dr. 06432
1972 Kiss, George Thomas, 1240 Post Rd. 06430
1950 Klimas, Francis Alexander, P.O. Box 1172 06432
1957 Knauff, Edward Franklyn, P.O. Box 1172 06432
1924 Kneale, Halford Benson, 239 Toilsome Hill Rd. 06604
1924 Kornblut, Alfred, 1651 Jennings Rd. 06430
1972 Lee, Michael Alan, 1172 Post Rd. 06430
1973 Leighton, Robert Leslie, 1305 Post Rd. 06430
1955 Lenci, Thomas Dexter, General Electric Co., Med. Ctr. 06431
1931 Lockhart, R. Harold, 37 Verna Field Rd. 06431
1975 Luchansky, Edward Moyher, 1700 Post Rd. 06430
1975 Machledt, John Hendrix, Jr., 325 Reef Rd. 06430
1959 Maxham, David Lincoln, 553 No. Benson Rd. 06430
1950 McCreery, Edward Prince, 325 Reef Rd. 06430
1949 Messinger, Henry J., 1597 Post Rd. 06430
1973 Molloy, Edward Michael, 1735 Post Rd. 06430
1945 Morgan, Kenneth Remsen, 325 Reef Rd. 06430
1971 Morrison, Murray Allan, 325 Reef Rd. 06430
1973 Moses, John Austin, 30 Kalan Circle 06430
1954 Moss, Albert Murray, 38 Meadow Court Dr. 06604
1953 Nevins, Robert Allan, 325 Reef Rd. 06430
1974 O'Rourke, George Ward, 1838 Black Rock Tpke. 06430
1962 Pearlstone, Arnold David, 1903 Post Rd. 06430
1960 Pendagast, Edward Leslie, Jr., Burr, R.F.D. No. 1 06430
1975 Pocock, Herman Deidler Jr., 3135 Easton Tpke 06431
1957 Rhame, Harold Ellis, Jr., 325 Reef Rd. 06430
1938 Ribner, Harold, 365 Toilsome Hill Rd. 06430
1959 Rogowski, John Peter, 137 Whiting Pond Rd. 06432
1975 Sacks, Kenneth L., 1305 Post Rd. 06430
1957 Sires, William Oscar, 1506 Post Rd. 06430
1952 Smolen, Elwyn Milton, 1177 Post Rd. 06430
1973 Smolen, Ruth L., 1177 Post Rd. 06430
1951 Spencer, Samuel, 190 Curtis Ter. 06432
1965 Stathacos, Eustace James, 1951 Congress 06432
1953 Stubenhaus, Jay H., 23 Sherman 06430
1975 Tan, Jose Manuel, 325 Reef Rd. 06430
1975 Thompson, Robert Charles, 3135 Easton Tpke. 06431
1974 Tidhar, Itschak, 325 Reef Rd. 06430
1973 Truchly, George, 325 Reef Rd. 06430
1971 Twersky, Joshua Moses, 400 Stillson Rd. 06432
1964 Van de Berghe, Richard L., 325 Reef Rd. 06430
1967 Waynik, Cyril, 60 Katuna Dr. 06430
1967 Weicholz, Sheldon, 675 Fairfield Woods Rd. 06432
1969 Weitzman, Hervey A., 60 Katona Dr. 06430
1954 Williams, Charles Rockwell, 325 Reef Rd. 06430
1968 Woods, Charles Alexander, 400 Stillson Rd. 06432
1976 Zigun, Charles, 400 Post Rd. 06430

NEW FAIRFIELD 06810

1971 Dwyer, Thomas Aquinas, Candlewood Corners
1969 Reitwiesner, Andrew George, P.O. Box 8144, Lake Dr., North
1975 Rostenberg, Peter Orris, Candlewood Corners

GLENBROOK 06906

1964 Nadel, Hyman, 397 Courtland Ave.

GREENWICH

1975 Alexander, Gail Susan, Stanwich Rd. 06832
1955 Arturi, Peter Adolph, 71 Old Church Rd. 06830
1940 Ayres, Payson Bryan, 4 Dearfield Dr. 06832
1969 Bachner, Paul, Greenwich Hospital 06830
1974 Banyard, Richard David, 4 Dearfield Dr. 06832
1949 Beaty, John Thurston, 49 Lake Ave. 06830
1954 Beck, Edith Marie, 56 Lafayette Pl. 06830
1963 Benninghoff, Daniel William, Greenwich Hospital 06830
1972 Bernene, James Louis, Greenwich Hospital 06830
1957 Bisceglia, Joseph Gregory, 49 Lake Ave. 06830
1949 Blossom, Dudley Buck, Pheasant Lane 06833
1968 Bogdan, Peter E., 49 Lake Ave. 06830
1948 Bolton, John Dewey, 49 Lake Ave. 06830
1976 Bonheim, Nelson Alfred, 1 Perryridge Rd. 06830
1950 Bonnett, Dovell Nicholas, 20 Dayton Ave. 06830
1975 Borges, James S., 49 Lake Ave. 06830
1965 Branom, Wayne Thurman, Jr., 49 Lake Ave. 06830
1966 Camp, Walter Atwood, 49 Lake Ave., 06830
1969 Campbell, Milton Flake, Dearfield Dr. 06832
1975 Catlin, Brian, 4 Dearfield Dr. 06830
1952 Christie, Frederick John, Greenwich Hospital 06830
1975 Cole, Raymond Melvin, 49 Lake Ave. 06830
1974 Coomaraswamy, Rama P., 4 Dearfield Dr. 06832
1970 Crisafi, Bartel Robert, 49 Lake Ave. 06830
1954 Dale, Paul Worthen, 38 Lake Ave. 06830
1973 Danehower, Richard Lloyd, 49 Lake Ave. 06830
1944 Davol, Rector Thomson, 49 Lake Ave. 06830
1950 Dean, Peter Michael, 49 Lake Ave. 06830
1952 Delany, Forbes, 4 Dearfield Dr. 06832
1947 Derkash, Stephen L., Rockwood Lane Spur 06830
1959 Doering, Eckart George, 4 Dearfield Dr. 06832
1975 Finlay, John Robert, 49 Lake Ave. 06830
1951 Finn, Frederick Wall, 4 Dearfield Dr. 06832
1975 Fisher, Milton, Putnam-Weaver Nursing Home 06830

1948 Fogel, David Hudson, 60 Putnam Park 06830
1973 Frank, Ross Delano, 3 Glen Ct. 06830
1972 Gallo, Gary Anthony, 20 Dayton Ave. 06830
1952 Gerster, John Wynne, 4 Dearfield Dr. 06832
1974 Griffin, William M., 49 Lake Ave. 06830
1961 Hampton, William Hately, 38 Lake Ave. 06830
1973 Hardy, Robert E., 42 Sherwood Pl. 06830
1968 Haskins, Donald Miller, General Reinsurance Life Corp. 06830
1960 Hecklau, Edmund Frederick, 42 Sherwood Pl. 06830
1963 Hillis, William, 4 Dearfield Dr. 06832
1950 Hoffman, J. Brooks, Perryridge Rd. 06830
1974 Howieson, John, 49 Lake Ave. 06830
1949 Howorth, Beckett, 4 Dearfield Dr. 06832
1965 Innes, James Walker, 1 Perryridge Rd. 06830
1971 Kauer, George L., Jr., American Lane 06830
1959 Keller, Norman Wolf, 49 Lake Ave. 06830
1949 Kent, Edwin Head, 58 North 06830
1972 Kopeloff, Nicholas, 4 Dearfield Dr. 06830
1953 Langan, Michael Joseph, 4 Dearfield Dr. 06832
1964 Larkin, John I., 42 Sherwood Pl. 06830
1950 Lee, John Frederick, 20 Dayton Ave. 06830
1969 Lightbody, Forrest E. H., Greenwich Hospital Association 06830
1972 Maher, Peter Harvey, 56 Lafayette Pl. 06830
1962 Mann, Warren A., 49 Lake Ave. 06830
1974 Marcus, Henriette, Hunting Ridge Rd. 06830
1973 Marino, A. Michael, Greenwich Hospital 06830
1950 Markley, Henry Eugene, 49 Lake Ave. 06830
1976 McCalley, Stuart Wesley, 49 Lake Ave. 06830
1962 McDonagh, Patrick Henry, 18 Mayo Ave. 06830
1953 McKendree, Charles G., Greenwich Hospital Association 06830
1963 Melmed, Ronald Martin, 38 Lake Ave. 06830
1974 Mickley, Diane Wilkins, 239 Glenville Rd. 06830
1974 Mickley, Steven Phillips, 239 Glenville Rd. 06830
1954 Millard, Donald Henry, 4 Dearfield Dr. 06832
1975 Missier, Peter Alexander, 4 Dearfield Dr. 06830
1959 Montimurro, Joseph Anthony, 49 Lake Ave. 06830
1962 Morley, David Clark, 6 Meadow Dr., 06830
1971 Murphy, Joseph M., Greenwich Hospital Association 06830
1948 Murray, John Gregg, Greenwich Hospital 06830
1970 Newberg, Marc E., 49 Lake Ave. 06830
1972 Newman, Robert David, Greenwich Hospital 06830
1971 Nicholl, (D.O.) Robert G., 221 Milbank Ave. 06830
1955 Nolan, Timothy Francis, 49 Lake Ave. 06830
1973 Orphanos, James Peter, 23 Maple Ave. 06830
1962 Patterson, Marjorie Butts, 4 Dearfield Dr. 06832
1961 Prangley, Arthur George, Jr., 4 Dearfield Dr. 06832
1964 Prunier, John Henry, 49 Lake Ave. 06830
1972 Reber, Robert Eugene, 4 Dearfield Dr. 06830
1968 Redmond, Anthony Pierce, 49 Lake Ave. 06830
1968 Rodda, Thomas Douglas, 49 Lake Ave. 06830
1966 Rosenberg, Arthur H., 42 Sherwood Pl. 06830
1946 Rourke, Thomas Alfred, 88 Milbank Ave. 06830
1968 Salerno, Silvio Aniello, Greenwich Hospital 06830
1953 Schwimmer, Robert Rowland, 49 Lake Ave. 06830
1975 Seamonds, Perry, 191 Overlook Dr. 06830
1938 Serrell, Howard P., Round Hill Rd. 06833
1973 Shanahan, Sheila Ann, 20 Dayton Ave. 06830
1970 Spencer, James Alexander Erskine, Greenwich Hospital 06830
1975 Stephenson, James H., 21 Desiree Dr. 06830
1940 Swarts, William B., Warwick Towers 06830
1939 Tunick, George L., 675 Steamboat Rd., 06830
1972 Ubogy, George A., 4 Dearfield Dr. 06830
1958 von Gal, Herbert Vreeland, 4 Dearfield Dr. 06832
1942 Weber, Frederick Clarence, Jr., 185 Putnam Park 06830
1953 Wheeler, Robert Channing, Greenwich Hospital 06830
1955 Wilsey, John Colver, 4 Dearfield Dr. 06832
1973 Wilson, James Ronald, Jr., 2 Glenville Rd. 06830
1974 Wolonske, Stephen D., 4 Dearfield Dr. 06830
1969 Wood, James William, 1 Perryridge Rd. 06830
1968 Worcester, James N., Jr., 20 Dayton Ave. 06830
1949 Wyatt, Robert Harry, 1 Perryridge Rd. 06830
1973 Yerg, Raymond A., American Can Co. 06830
1976 Zales, Michael Robert, Edgewood Dr. 06830

HUNTINGTON 06484

1967 Feierstein, Saul, 43 Huntington Pl.
1975 Mizak, Daniel Joseph, 30 Huntington

MONROE 06468

1961 Garrity, James David, Elm
1928 Harshbarger, Isaac Long, Purdy Hill Rd.
1969 Light, Claude F., 494 Main

NEW CANAAN 06840

1937 Abrahams, Meyer, 1 Colonial Court
1964 Benton, Arnold Jerome, Silver Hill Foundation
1952 Brown, Charlotte Rush, Valley Rd.
1951 Brown, David Seeley, 173 East Ave.
1965 Chachkes, Jacob Trister, 194 South Ave.
1941 Cody, Thomas Patrick, 241 Main
1956 Crary, Horace Ingraham, 173 East Ave.
1954 Crown, Charles Augustus, 194 South Ave.
1960 Eckhardt, William Francis, Jr., 173 East Ave.
1965 Flynn, Thomas Garrett, 138 East
1941 Hebard, George Whiting, 303 Elm
1945 Hiden, Robert Battaile, Silver Hill
1975 Humphries, Robert Hunter, Silver Hill Foundation
1972 Katis, James George, Silver Hill Foundation
1973 Marcus, Lawrence I., Silver Hill Foundation
1971 Moore, Morgan Francis, 303 Elm
1965 Neumann, Charles Pilgrim, Silver Hill
1952 Pullen, Edward Markey, 242 Wahackme Rd.
1949 Rem, Edward A., 73 Comstock Hill Rd.
1958 Rutherford, James Woodson, 162 East Ave.
1975 Scavetta, Joseph Francis, Silver Hill Foundation
1973 Schuster, Carlotta Lief, Silver Hill Foundation
1967 Shutkin, Peter Michael, 173 East Ave.
1974 Slater, James A., 173 East Ave
1975 Stubblefield, Robert Lee, Box 1177, 208 Valley Rd.
1935 Terhune, William Barclay, 252 Valley Rd.
1947 Wright, Harold S., Silver Hill Foundation

NEWTOWN 06470

1972 Annunziata, Vincent, R.D. No. 3, 6 Patricia La.
1973 Bauta, Humberto Pedro, Danbury-Newtown Rd.
1972 Bolstad, Ralph Arthur, Fairfield Hills Hospital
1968 Borrelli, Anthony Paul, Danbury-Newtown Rd.
1970 Craven, Raymond Orvin, Danbury-Newtown Rd.
1975 Devarajan, Odhikadu, Fairfield Hills Hospital
1962 Draper, Thomas F., Deep Brook Rd.
1976 Eckert, George Robert, 35 Mt. Pleasant Rd.
1937 Egee, J. Benton, 36 Currituck Rd.
1970 Evans, Donald Thomas, Danbury-Newtown Rd.
1975 Gretsch, Barbara Jean, 44 Castle Hill Rd.
1960 Grossman, Robert S., P.O. Box 426
1975 Heckelman, Barry Jay, Danbury-Newtown Rd.
1970 Kotch, Philip Irwin, P.O. Box 426
1974 Margules, Richard M., P.O. Box 426

1966 Meehan, Bernard Joseph, Danbury-Newtown Rd.
1965 Miller, Robert Bernhardt, Fairfield Hills, Hospital
1962 Petruschow, Anatol, Fairfield Hills Hospital
1959 Rhinehart, John Woodward, 46 West
1968 Thomas, Douglas Wyndham, P.O. Box 192
1973 Townsend, Gary L., Danbury-Newtown Rd.
1975 Young, Alex William, Jr., Danbury-Newtown Rd.

NOROTON 06820

1961 Fuoco, Louis A., 39 Fitch Ave.

NORWALK

1972 Ahmed, Ezzeldin H. S., 114 East Ave. 06851
1941 Aiello, Louis James, 394 West Ave. 06850
1950 Allen, Benjamin Israel, 13 Park 06851
1975 Andrews, Joseph Francis, Jr., 153 East Ave. 06811
1975 Atlas, Ernest, 83 East Ave. 06851
1969 Auerbach, Neil, 149 East Ave. 06851
1963 Barton, Jerome, 10 Mott Ave. 06850
1975 Bernard, Marcelle Thomasine, 156 East Ave. 06851
1974 Biondi, Robert Michael, 149-153 East Ave 06851
1942 Bradley, E. Tremain, 31 Stevens and 32 Elm, New Canaan 06840
1955 Bradley, Harry Abner, Jr., Richards Ave. 06850
1969 Brody, David Michael, 10 Mott Ave. 06850
1964 Brovender, Arthur, 10 River 06850
1958 Burke, Albert Vincent, 195 East Ave. 06851
1973 Chan, Daniel W., 108 East Ave. 06851
1973 Chapnick, Girard A., 166 East Ave. 06851
1975 Chess, Jeremy, 153 East Ave. 06851
1965 Corey, Joseph Michael, 53 East Ave. 06851
1945 Corwin, Daniel Bernard, 49 East Ave. 06851
1952 Corwin, Henry Richard, 13 Park 06851
1975 Coscia, Anthony Gaetano, 83 East Ave. 06851
1965 Cronin, William Timothy, 395 West Ave. 06850
1958 Dearani, Abraham Charles, 195 East Ave. 06851
1937 Diamond, Edward H., 71 East Ave. 06851
1959 DiCorato, Frank, 10 Mott Ave. 06850
1954 Dwyer, Gregory Kennedy, 5 Elmcrest Ter. 06850
1966 Fabrizio, Tuula I. J., 42 Stevens 06850
1953 Falsone, Jack Joseph, 147 East Ave. 06851
1951 Felder, Edward Arnold, Norwalk Hospital 06856
1975 Fenster, Michael, 10 Mott Ave. 06850
1940 Fitzpatrick, Wesley Fenton, 30 Homer 06851
1963 Floch, Martin Herbert, 24 Stevens 06856
1951 Flynn, Edward John, 10 Mott Ave. 06850
1975 Gaynor, Edward B., 153 East Ave. 06851
1946 Gens, John Paul, 153 East Ave. 06851
1947 Genvert, Harold, 5 Elmcrest Ter. 06850
1963 Georgakis, Nicholas, 71 East Ave. 06851 and 230 Danbury Rd., Ridgefield
1974 George, Robert Carr, 10 Mott Ave. 06850
1955 Giardina, David Diego, 394 West Ave. 06850
1938 Giuliano, Louis Augustine, Old Saugatuck Rd. 06855
1949 Gloetzner, Henry James, 71 East Ave. 06851
1959 Goodman, Stanley Erwin, 160 East Ave. 06851
1938 Gorham, Grace Viola, 64 Wall 06850
1955 Griffith, James Joseph, 83 East Ave. 06851
1963 Grossman, Bertram Howard, 153 East Ave. 06851
1974 Hedley, Gerald E., 153 East Ave. 06851
1959 Herman, Eugene B., 520 West Ave. 06850
1968 Hermann, Jens H., 166 East Ave. 06851
1975 Iacovino, John Ralph, 15 Stevens 06850
1973 Jee, Kwang Soo, Fullmar La. 06850
1951 Jones, Martling Barnet, 197 East Ave. 06855
1949 Kalaman, Francis J., P.O. Box 629 06851
1973 Kaye, Roger Henry, 5 Elmcrest Terr. 06850
1966 Klein, Jerome Joshua, 83 East 06851
1970 Kramer, Theodore, 10 Mott Ave. 06850
1975 Levine, Robert Arthur, 85 East Ave. 06851
1970 Littman, Edward, 83 East Ave. 06851
1974 Lo, Chun Bun, 108 East Ave. 06851
1953 Lovekin, Louise Gout, 10 Mott Ave. 06850
1949 Lyons, Benjamin Ephraim, 10 Mott Ave. 06850
1968 Maloney, Paul Keating, Jr., 12 Elmcrest Ter. 06850
1952 Marinucci, Edmund Dominic, 108 East Ave. 06851
1964 McCaul, Kevin Francis, 10 Mott Ave. 06850
1975 McNamara, John Raymond, 10 Mott Ave. 06850
1962 Mendoza, Ruben, 15 Belden Ave. 06850
1963 Meno, George Peter, 108 East Ave. 06851
1965 Merdinolu, Murat Arthur, 152 East Ave. 06851
1946 Mills, Clifford Wheeler, 65 East Ave. 06851
1951 Minor, James Vincent, Jr., 10 Mott Ave. 06850
1961 Minot, Henry Davis, 5 Elmcrest Ter. 06850
1951 Mulford, Edwin H., II, 5 Elmcrest Ter. 06850
1960 Nair, Sreedhar, Carriage Dr. 06850
1951 Norrington, Eric George, 153 East Ave. 06851 and 1 Avery Pl., Westport 06880
1973 Novack, Stuart Neil, 83 East Ave. 06851
1976 Olanoff, Martin, 153 East Ave. 06851
1960 Orlins, Melvin David, Studio Lane 06850
1970 Orr, Harry Dawson, Jr., 35 Hawthorne Dr., 06851
1967 Osborn, Dickson, 153 East Ave. 06851
1938 Padula, Ralph Domenick, 84 West Ave. 06850
1975 Pang, Sau Chu, 17 Monroe 06854
1975 Papowitz, A. Joel, 83 East Ave. 06851
1963 Piro, John Frank, 53 East Ave. 06851
1973 Pool, John L., 24 Stevens 06856
1949 Richman, Daniel Powell, 111 East Ave. 06851
1955 Rogers, William Joseph, 10 Mott Ave. 06850
1963 Sacco, John Joseph, 85 East Ave. 06851
1974 Sallick, Richard Marshall, Norwalk Hospital 06856
1974 Samai. Hossein, Norwalk Hospital 06856
1966 Schulman, Paul L., 83 East Ave. 06851
1972 Schwartz, Paul Edward, 83 East Ave. 06851
1947 Serena, Frank A., 158 East Ave. 06851
1946 Serena, John Mario, 27 Bettswood Rd. 06851
1975 Shah, Suvarna M., 50 Washington St. 06854
1931 Simon, Louis G., 212 New Canaan Ave. 06850
1968 Singer, Bernard, 104 East Ave. 06851
1972 Singer, Joel Barnett, 153 East Ave. 06851
1950 Skluth, L. Herbert, 87 East Ave. 06851
1963 Stabinsky, Charles, 152 East Ave. 06851
1943 Steinberger, Laszlo, 166 East Ave. 06851
1974 Stember, Rishon H., 111 East Ave. 06851
1937 Stietzel, Eric Ernst, 65 Newtown Ave. 06851
1975 Stovell, Peter Buckner, 124 East Ave. 06851
1962 Sullivan, William Michael 83 East Ave. 06851
1965 Tager, Michael George, 12 Elmcrest Ter. 06850
1966 Tracey, Edward J., 124 East Ave. 06851
1971 Tracey, James Patrick, 124 East Ave. 06851
1952 Trambert, Harry L., 150 East Ave. 06851
1968 Truax, Hollis Norman, Norwalk Hospital 06856
1953 Vetter, Ignatius Joseph, 5 Elmcrest Ter. 06850
1971 Vigna, Vincenzo, 108 East Ave. 06851
1958 Walker, Harold Clifford, 10 Mott Ave. 06850
1975 Weinberger, Norman J., 149 East Ave. 06851
1971 Weinstein, Arnold H., 10 Mott Ave. 06850
1938 Weinstein, Nathan, 108 East Ave. 06851
1975 Weinstein, Stephen Louis, 104 East Ave. 06851
1958 Wexler, Richard, 166 East Ave. 06851
1968 Williams, Shirley Yvonne, 42 Maple 06850
1971 Zusman, Howard Eugene, Norwalk Hospital 06856

OLD GREENWICH 06870

1939 Anderson, Clifton Winthrop, P.O. Box 37
1973 Blumberg, Joel Myron, 8 West End Ave.
1950 Brock, Warren Heath, 311 Sound Beach Ave.

1967 Gray, Charles Helman, 4 Cove Ridge Lane
1974 Kitchen, Robert Nelson, 8 West End Ave.
1972 Lewis, Stephen H., 8 West End Ave.
1973 Nemec, Jutta Magnus, 1 Heusted Dr.
1976 Poutas, John J., 46 North Ridge Rd.
1973 Rein, Joel M., 8 West End Ave.
1959 Schmitt, Daniel, 8 West End Ave.
1963 Siefert, Frederick Edward, 8 West End Ave.

RIDGEFIELD 06877

1975 Boorer, Rebecca T., 31 Scott Ridge Rd.
1975 Bowen, Malcolm Garry, Ridgefield Med. Bldg.
1975 Brook, Joel Eugene, 38 Grove
1967 Buchman, Joseph Gilbert, 38 Grove
1974 Chambers, C. Frank, P.O. Box 635
1975 Cohen, George Allan, 890 Ethan Allen Highway
1975 Elisofon, Robert M., 38 Grove
1966 Guigui, Armand, 900 Ethan Allen Highway
1975 Guigui, Christine B., 484 Main
1972 Katis, Lauma U., Old West Mountain Rd.
1951 Safford, Theodore, Jr., 69 Main
1962 Sheehan, James Ennis, 484 Main
1927 Woodford, Francis Bowditch, 325 Main
1975 Zelson, Carl, 71 Bennetts Farm Rd.

RIVERSIDE 06878

1975 Caragol, William John, 96 Club Rd.
1967 Kelly, J. Colman, 30 Bonwit Rd.
1939 Read, Francis Arnold, 10 Crescent Rd.

ROWAYTON 06853

1938 Hunkemeier, Edna, 1 Nylked Ter., Pine Point
1948 Levine, Abraham I., 26 Wilson Ave.
1956 Rose, Gilbert Jacob, 25 Sammis

SANDY HOOK 06482

1976 Wachsman. Harvey Frederick, Great Quarter Rd.

SHELTON 06484

1949 Hansen, Wilbur Henry, 200 Huntington
1941 Pagliaro, Joseph John, 405 Coram Ave.

SOUTH NORWALK 06854

1946 Burack, Jason Oliver, 20 North Main

SOUTHPORT 06490

1935 Antell, Maxwell Joseph, 64 Southport Woods Dr.
1973 Cardin, Mary Jean, 45 Southport Woods Dr.
1939 Hardenbergh, Daniel Bailey, 101 Harbor Rd.
1949 Kueffner, William Robert, 99 Harbor Rd.
1953 Reinhard, Warren John, 311 Pequot Ave.
1961 Scholan, Francis James, 99 Harbor Rd.
1947 Sterrett, Raymond A., 115 Main

SPRINGDALE 06879

1949 Savak, Joseph Ernest, 743 Hope

STAMFORD

1946 Abrahamson, Robert Henry, High Valley Way 06903
1956 Banfield, Richard Sterling, Jr., 144 Morgan 06905
1936 Bannon, Frederick Michael, 691 Westover Rd. 06902
1975 Baron, Bruce Robert, 37 Glenbrook Rd. 06902
1954 Bellwin, Alexander, 144 Morgan 06905
1968 Benjamin, Burton Irving, 19 Third 06902
1954 Benjamin, Martin Robert, 1425 Bedford 06905
1965 Bessa, Octavio, Jr., 1380 Bedford 06905
1974 Blabey, Robert Groesbeck, Jr., 70 Mill River 06902
1974 Blass, Jolan Wirth, 173 Hubbard Ave. 06905
1973 Bockar, Joyce A., 146 Shadow Ridge Rd. 06905
1957 Borowy, John Edward, 1380 Bedford 06905
1974 Bottiglieri, Nicholas G., 965 Hope 06907
1965 Branham, Henry Ezell, Jr., 1116 Summer 06905
1971 Braun, Ronald Walter, 133 MacGregor Dr. 06902
1954 Breakell, Edward Samuel, Stamford Hospital 06902
1967 Browne, Francis Joseph, 1425 Bedford 06905
1961 Browne, Michael Alexander, 1425 Bedford 06905
1961 Browning, Louis D., Jr., 83 Morgan 06905
1971 Bujdud, Christian M., 192 Barclay Dr. 06903
1969 Bull, Sherman Marsh, 70 Mill River 06902
1951 Bullen, Halsey Graves, 21 Broad 06901
1969 Bullwinkel, George Albert, Jr., 70 Mill River 06902
1973 Carino, John Maurice, 47 Oak 06905
1944 Cassone, Rocco, 1010 Washington Blvd. 06901
1966 Chamberlin, Allen Chapin, 144 Morgan 06905
1950 Cloonan, John Joseph, 95 Morgan 06905
1946 Colburn, Russell Fitch, 1416 Bedford 06905
1954 Coleman, Monroe, 144 Morgan 06905
1940 Connolly, Joseph Patrick, 193 Davenport Dr. 06902
1974 Cook, Colin Burford, 297 High Ridge Rd. 06905
1969 Cottle, Robert D., 125 Strawberry Hill Ave. 06902
1961 Coughlin, Francis Raymond, Jr., 144 Morgan 06905
1940 Crane, James Everett, 965 Hope 06907
1975 Dalgin, Paul Henry, 1100 Bedford 06905
1962 Danoff, Stuart Jay, 1867 Summer 06905
1973 Deutchman, Ralph Floyd, 47 Oak 06905
1968 Dombrowski, Edwin Henry, 95 Morgan 06905
1976 D'Onofrio, Gregory Richard, Jr., 21 Broad 06901
1973 Dreyer, Neil Paul, 19 Third 06902
1976 Dubissette, Michael E., 115 West Main 06902
1968 Echental, Arthur A., 98 Hoyt 06905
1973 Elder, William John, 1200 Bedford 06905
1956 Eliasoph, James Lee, 70 Mill River 06902
1956 Eliasoph, Joan, 112 Hoyt 06905
1955 Eng, Gunnar Orville, 83 Morgan 06905
1951 Epstein, Ezra Jacob, 1100 Bedford 06905
1959 Erdelyi, Paul Gedeon, 132 Hope 06906
1973 Erichson, Robert B., 140 Hoyt 06905
1952 Fakkel, Marie Josephine, 100 Hoyt 06905
1954 Farrell, Jean Elizabeth, 77 Bedford 06902
1950 Farrell, Richard Francis, 35 Hoyt 06905
1933 Fincke, C. Louis, 21 Broad 06901
1937 Fine, Barnet, 70 Grove 06902
1936 Fine, Joseph, 55 Forest Rd. 06902
1962 Fisher, Lloyd Chaim, 31 Strawberry Hill Ave. 06902
1975 Fitzgerald, Terence Sean, 500 Newfield Ave. 06905
1971 Fleming, Richard Joseph, Shelburne & W. Broad 06902
1958 Fogelman, Henry, 69 Forest 06902
1976 Forman, Mel Alan, 122 Hoyt 06905
1969 Fox, Martin, 1435 Bedford 06905
1974 Friedman, Michael Arnold, 144 Morgan 06905
1931 Gandy, R. Alfred, East La. 06905
1953 Geer, Enos Throop, 144 Morgan 06905
1974 Gefter, William Irvin, St. Joseph's Hospital 06904
1931 Giles, Newell Walton, 1 Atlantic 06901
1964 Gofstein, Ralph M., 235 Den Rd. 06903
1953 Golbey, Robert Bruce, 1424 High Ridge Rd. 06903
1974 Gold, Leonard, 1425 Bedford 06905
1974 Goldberg, Paul Aaron, 125 Strawberry Hill Ave. 06902
1954 Goldfarb, Jerry, 19 Third 06902
1949 Goldfarb, Simon L., 1435 Bedford 06902

1965 Goodhue, Peter Ames, 70 Mill River 06902
1968 Grann, Victor Robert, 140 Hoyt 06905
1970 Gray, Parke Hanswood, 70 Mill River 06902
1974 Griffiths, Helen Lorraine, 1 Atlantic 06902
1962 Gromults, Joseph Michael, Jr., 125 Strawberry Hill Ave. 06902
1947 Haine, John W., 83 Morgan 06905
1972 Hansen, Carlos Enrique, 108 Slice Dr. 06907
1975 Hanson, Ervin Eugene, 83 Morgan 06905
1955 Harrison, Arthur M., 1100 Bedford 06905
1967 Hassan, Kamal Aly, 1425 Bedford 06905
1972 Hecht, Harvey Leon, Stamford Hospital 06902
1955 Izzo, Patrick Anthony, 21 Broad 06901
1944 Jaiven, Saul Joseph, 21 Bridge 06905
1956 Kanter, Donald Morton, 31 Strawberry Hill Ave. 06902
1965 Karas, Lewis Maxwell, 19 Third 06902
1956 Kardos, Joseph Anthony, 860 Stillwater Rd. 06902
1964 Keddy, Russell Alfred, 77 Prospect, Apt. 4D 06902
1955 Keller, Louis, 554 Bedford 06902
1951 Kemp, Walter Wyckoff, 21 Broad 06901
1976 Khoshnood, Fereydoon, 44 Strawberry Hill Ave. 06902
1976 Kim, Peter, 750 Summer 06905
1957 King, Stewart Alan, 70 Mill River 06902
1947 Klein, Harold T., 33 Forest 06902
1969 Klein, Neil Charles, 31 Strawberry Hill Ave. 06902
1939 Koffler, Arthur, 39 Glenbrook Rd. 06902
1970 Krasnogor, Lester Jay, Stamford Hospital 06902
1959 Kraut, Herbert Leon, 47 Oak 06905
1952 LaCorte, Salvatore, 90 Wyndover La. 06902
1965 LaForte, Peter, 70 Mill River 06902
1973 Lebowitz, Alan I., 31 Strawberry Hill Ave. 06902
1951 Levine, Harry Philip, 828 High Ridge Rd. 06905
1951 Levine, Julian, 23 Hoyt 06905
1975 Lovegrove, Robert Harry, 35 Hoyt 06905
1968 Lundberg, Einar Albin, 1937 West Main 06904
1961 Madison, Robert Louis, 27 Strawberry Hill Ave. 06902
1953 Magida, Melville Gerson, 31 Strawberry Hill Ave. 06902
1934 Malloy, Edward Francis, 90 Hubbard Ave. 06905
1948 Mancinelli, M. Joseph, Revonah Woods 06905
1968 Manimbo, Sergio G., 82 Erickson Dr. 06903
1946 Mastrangelo, Angelo, Jr., 19 Grandview Ave. 06905
1933 McFarland, Frederick William,1425 Bedford 06905
1948 McIntyre, Frederick Powers, 23 Hoyt 06905
1968 McKee, David Rice, 144 Morgan 06905
1953 McNerney, John Cornelius, 111 Four Brooks Dr. 06903
1975 McSweeney, James Joseph, 128 Strawberry Hill Ave.
1947 Meacham, Charles Thomas, 1911 Summer 06905
1975 Mehta, Sukh Samtat Raj, 1700 Bedford 06905
1946 Miller, Hugh Kennedy, 70 Mill River 06902
1955 Morgan, Laura Grey, 21 Bridge 06905
1949 Moriarty, James Patrick, 23 Hoyt 06905
1970 Mostel, Arthur P., 27 Strawberry Hill Ave. 06902
1949 Moulyn, Adrian C., 63 Palmer's Hill Rd. 06902
1972 Mujeeb, Mohamed, 8 Weil 06905
1947 Mulaire, Victor J., 1010 Washington Blvd. 06902
1970 Nagle, John A., 23 Hoyt 06905
1940 Nemoitin, Bernard Oscar, 96 Main 06901
1973 Niell, Jose Pedro, 25 Third 06902
1952 Nolan, John Joseph, 95 Morgan 06905
1975 O'Connell, Richard Lee, 120 Long Ridge Rd. 06902
1946 Ogilvie, John Black, 95 Morgan 06905
1962 Orth, Robert Heyde, 47 Oak 06905
1957 Ostriker, Marilyn, 144 Morgan 06905
1955 Ostriker, Paul J., 144 Morgan 06905
1970 Ozcomert, Sedat, 555 Newfield Ave. 06906
1963 Pesiri, Ralph Anthony, 1729 Bedford 06905
1946 Poczabut, John Stephen, 23 Hoyt 06905
1970 Prokop, James Donald, 83 Morgan 06905
1948 Raffaele, Frank Joseph, 159 Main 06901
1969 Rainville, Thomas Joseph, 1867 Summer 06905
1973 Rapoport, Alan M., 50 Glenbrook Rd. 06902
1938 Rawls, Cotton, 300 Main 06901
1969 Resnick, Jerome S., 50 Glenbrook Rd. 06902
1929 Resnik, William Harry, 27 Fox Hill Rd. 06903
1975 Rha, Chan-Kook, 95 Morgan 06905
1954 Richar, Walter John, 22 Beach View Dr. 06902
1960 Ridgway, Walter Stevens, 70 Mill River 06902
1975 Rini, James Martin, 128 Strawberry Hill Ave. 06904
1974 Robin, Noel Ira, Stamford Hospital 06902
1942 Robison, Roy Calvin, 95 Morgan 06905
1951 Rogers, James Forbes, 70 Mill River 06902
1966 Rogers, Martin C., 28 Haviland Rd. 06903
1953 Rosenberg, Charles H., 810 Bedford 06905
1975 Rubinstein, Henry Maxwell, 44 Strawberry Hill Ave. 06902
1951 Ryan, John Joseph, 172 North 06902
1951 Ryan, William Arthur, 1729 Bedford 06905
1962 Santagata, Pasquale William, 78 West Hill Circle 06902
1964 Sava, Gerard Anthony, 70 Mill River 06902
1957 Savitsky, Elias, 47 Oak 06905
1972 Schneidau, Peter Blair, Stamford Hospital 06902
1970 Schwartz, Arnold Jay, Stamford Hospital 06902
1949 Sheard, Charles, 76 Glenbrook Rd. 06902
1973 Sheftell, Fred D., 500 Newfield Ave. 06905
1938 Sherman, Saul Harvey, 27 Bridge 06905
1969 Sherrington, Harold Jaime, 555 Newfield Ave. 06905
1960 Siderides, Cleo I., Stamford Hospital 06902
1958 Siderides, Lambros E., 1100 Bedford 06905
1950 Slater, Gertrude, 1675 Bedford 06905
1962 Smeraldi, Richard Anthony, 44 Strawberry Hill Ave. 06902
1941 Smith, Leo Michael, Stamford Hospital 06902
1942 Stankard, William Francis, 51 Hartcroft Rd. 06902
1959 Steglich, Carl Peter, P.O. Box 1092 06904
1965 Steinberg, David Herman, 95 Morgan 06905
1975 Steinberg, Michael G., St. Joseph's Hospital 06902
1962 Steller, Robert Eugene, 95 Morgan 06905
1965 Strauch, Gerald Otto, 70 Mill River 06902
1961 Sullivan, John Joseph, Jr., 144 Morgan 06905
1967 Suttenfield, Virginia, 500 Wire Mill Rd. 06903
1949 Svedlow, Bernard Dave, 1767 Summer 06905
1950 Tella, Ralph Thomas, 107 Glenbrook Rd. 06902
1958 Trent, Joe Watson, Westover Park 06902
1940 Troy, William Daniel, 140 Hoyt 06905
1967 Usman, Ahmed, 1700 Bedford 06905
1970 Vinnick, Leonard, 1100 Bedford 06905
1968 Voss, Howard Evan, 144 Morgan 06905
1966 Walsh, Thomas Joseph, 1100 Bedford 06905
1957 Waxberg, Joseph David, 65 Prospect 06902
1953 Weed, Clayton Bagslaw, 37 Glenbrook Rd. 06902
1975 Weinstein, Paul L., 140 Hoyt 06905
1969 Weisel, Alan, 47 Oak 06905
1967 Widrow, David Richard, 1425 Bedford 06905
1952 Williams, Frederick Davis, 1 Atlantic 06901
1956 Wilson, John Marion, Jr., 144 Morgan 06905
1972 Winterhalter, Charles McNeill, Pitney Bowes, Walnut & Pacific 06904
1961 Wolfsohn, Alfred Werner, 31 Strawberry Hill Ave. 06902
1947 Wrona, Eugene Adam, 1435 Bedford 06905
1954 Zalichin, Henry, 555 Newfield Ave. 06905
1954 Zimmern, Richard Lee, 1867 Summer 06905

STRATFORD 06497

1973 Alena, Gordon Roland, 3272 Main
1963 Asken, Saul, 2505 Main
1957 Biassey, Earle Lambert, 39 Stonybrook Rd.
1959 Birge, Elizabeth Barbara, 3017 Main
1972 Cohen, Selwyn Alan, 2875 Main
1961 Copeck, Gerald, 39 Stonybrook Rd.
1969 Covey, William G., 2875 Main
1935 DelVecchio, Leonard Frederick, 472A Commanche Lane, Oronoque Village
1936 Friedman, Nathan Harris, Beaver Dam Rd.
1927 Haberlin, Chester Edward, 2553 Main
1972 Halloran, James V., 184B Apache La.
1941 Kaufman, William 395A Ottawa La., Oronoque Village
1963 Keogh, Raymond Joseph, 3095 Main
1959 Levieff, Leo, 2875 Main
1964 Levy, Samuel Howard, 3007 Main
1953 Licciardello, Anthony Thomas, 2875 Main
1946 Lyddy, John Roger, 2875 Main
1938 McLean, T. Smith, Jr., 2875 Main
1931 Oesau, Harold Thomas, 1980 Main
1955 Peterson, Richard Charles, 3966 Main
1942 Roberge, George Edward, 51 Meadowmere Rd.
1960 Weitzner, Arthur, 373 Nichols Ave.
1960 Yildizalp, Naci Mehmet, 2875 Main
1947 Zielinski, John Blaise, 2875 Main

TRUMBULL 06611

Long Hill

1933 Adzima, Joseph Matthew, 45 West Lake Rd.
1957 Austrian, Herman, 935 White Plains Rd.
1947 Brown, Richard J., 157 Pinewood Trail
1961 Citrano, Eugene Charles, 502 White Plains Rd.
1935 Creaturo, Nicholas Edward, 10 Rockland Rd.
1958 Cronan, Thomas Leo, 4719 Madison Ave.
1973 Crossman, Wayne Francis, 15 Laurie Rd.
1962 Giangrasso, Anthony Eugene, 6363 Main
1974 Koehler, Paul Burrell, Chesbrough Pond's Inc.
1948 Mack, Arthur Gerard, 1918 Huntington Tpke.
1960 Neth, William Francis, Trumbull Center
1958 Sherlip, Bernard Jay, 935 White Plains Rd.
1942 Trautman, Edwin Frederick, 5367 Main
1959 Veneruso, Ciro, 935 White Plains Rd.
1934 Wehger, Roland Theodore, 158 Plymouth Ave.
1973 Willis, John August, 6004 Main

WESTON 06880

1973 Albert, Joel Stuart, 8 Stonehenge Rd.
1957 Bucky, Thomas Lee, Weston Rd.
1962 Schmiedeck, Raoul A., 34 Cedar Hills Rd.

WESTPORT

1970 Aaron, Stuart Denis, 251 Riverside Ave. 06880
1954 Adler, Daniel Harvey, 131 Kings Highway North 06880
1948 Barnett, Roy Nathaniel, 125 South Compo Rd. 06880
1953 Beasley, Albert Sidney, 129 Kings Highway North 06880
1960 Beck, David, 44 Elm 06880
1952 Beinfield, Malcolm Sidney, 125 Kings Highway 06880
1966 Bender, Stuart Howard, 127 Kings Highway North 06880
1957 Beres, Paul, 162 Kings Highway North 06880
1954 Berman, Leo H., 17 Otter Trail 06880
1963 Brovender, Stanley, 2 Colony Rd. 06880
1973 Brown, Harry J., 310 Main 06880
1971 Carroll, Robert McHenry, 246 East State 06880
1963 Cassell, Robert Theodore, 32 Imperial Ave. 06880
1971 Coyle, Thomas F., 830 State East 06880
1973 Czuczka, Peter, 129 King's Highway No. 06880
1961 Doctor, Daniel W., 129 Kings Highway North 06880
1973 Doctor, Judith Eva, 129 Kings Higway North 06880
1962 Dolberg, Harold M., 2 Mayflower Pkwy. 06880
1965 Dorison, Ezra Eli, 136 Main 06880
1975 Du Leep, Kodendera Subbiah, 125 Kings Highway North 06880
1930 Ellrich, David Lionel, 266 State 06880
1975 Frumkin, Samuel, 162 Kings Hwy. North 06880
1943 Gerow, George H., 34 Imperial Ave. 06880
1958 Goehausen, Myles Conrad, 266 East State 06880
1973 Horan, Anthony Harding, 131 Kings Highway No. 06880
1960 Hughes, William Francis, 125 Kings Highway 06880
1945 Johnson, William Henry Nelson, 12 North Ridge Rd. 06880
1965 Kallick, Charles John, 35 East Main 06880
1955 Kaunitz, Paul E., 127 Kings Highway North 06880
1965 Kessler, William, The Willows 06882
1970 Laffaye, Horace A., The Willows 06880
1947 Lebhar, Neil F., 20 Bay 06880
1958 Lichtman, Alvin, 24 Easton Rd. 06882
1969 Lieberson, Alan David, 162 Kings Highway North 06880
1973 Lippman, Kenneth J., 225 Main 06880
1972 Loveless, Mary H., 22 Cavalry Rd. 06880
1976 Luck, Leon Eugene, 225 Main 06880
1950 Lynch, Franklin, 20 Bay 06880
1952 Micheels, Louis Joseph, 129 Kings Highway North 06880
1965 Moadel, Michael Moosa, 170 West State 06880
1934 Morgan, William Oliver, 269 Main 06880
1975 Moskowitz, Robert Stephen, 225 Main 06880
1938 Northrop, Robert Arthur, 95 Hillspoint Rd. 06880
1959 Perlis, Sanford James, 131 Kings Highway North 06880
1968 Raff, Neil Charles, 6 Village Sq. 06880
1967 Roberts, Gerald David, 162 Kings Highway North 06880
1970 Robins, Richard John, 431 East State 06880
1969 Rossi, Joseph P., 8 Ferry La. East 06880
1958 Sacks, Herbert Simeon, 35 East Main 06880
1971 Schneider, Robert George, 253 Riverside Ave. 06880
1952 Schultz, Martin, 81 Myrtle Ave. 06880
1970 Shapiro, Howard I., 131 Kings Highway North 06880
1975 Shapiro, J. Robert, 47 Long Lots Rd. 06880
1975 Shaywitz, Sally Epstein, 17 Cardinal Lane 06880
1976 Sheppard, Edward Camillo, 38 West State 06880
1958 Shiller, Jack Gerald, 129 Kings Highway North 06880
1941 Shoup, Homer B., Jr., 131 Kings Highway North 06880
1967 Silberman, Charles George, 136 Main 06880
1943 Solway, Rueben Isaac H., 1 St. John Pl. 06880
1961 Steinberg, Harold, 162 Kings Highway North 06880
1950 Syz, Hans, 30 Turkey Hill Road South 06880
1960 Tec, Leon, 11 Rocky Field Rd. 06880
1960 Wasserman, Harvey Robert, 136 Main 06880

WILTON 06897

1975 Appleby, Robert Earle. 55 Danbury Rd.
1976 Bennett, Alfred M., 331 Danbury Rd.
1974 Campbell, Carleton, 347 Nod Hill Rd.
1966 Franklin, David Noel, Merwin Building
1972 Jonas, Sarah Linden, Old Ridgefield Rd., P.O. Box 632
1974 Klein, Madeline, 30 Branch Brook Rd.
1975 Lehmann, Walter Xavier, 27 Cricket Lane
1948 Maidman, Leonard, P.O. Box 218
1975 Martin, Dean Nelson, 55 Danbury Rd.
1954 Zucker, Richard Arthur, Cricket Lane

OUT OF COUNTY

1940 Adams, Mary, 2 Quintard Dr., Port Chester, New York 10573
1929 Amos, Isadore Louis, Sun Valley Estates, Tarpon Springs, Florida 33589
1947 Anton, Michael Charles, U. S. Military Academy, Stewart Health Clinic, Newburgh, N.Y. 12550
1938 Ashcroft, Allan Davis, 133 N. Pompano Beach Blvd., Apt. 801, Pompano Beach, Florida 33062
1947 Barber, Richard Robbins, 4520 No. Camino Kino, Rt. No. 5, Box 702, Tucson, Arizona 85718
1936 Beck, Eugene Cornelius, 301 Park Ave., New York City, New York 10028
1955 Boas, Norman Francis, 100 Clift, Mystic 06355
1926 Bowman, Stuart Howard, 3300 Gulf Shore Blvd., Naples, Florida 33940
1965 Chiaramonte, Cajetan Thomas, R.D. #1, Bloomer Rd., North Salem, N.Y. 10560
1942 Colmers, Rudolf Albert, 217 East Huntingdon, Savannah, Georgia 31401
1937 Cunningham, Robert D.M., 976-A Heritage Village Southbury 06488
1934 D'Andrea, Frank Henry, Strawberry Hill Farm, Shoreham, Vermont 05770
1928 Delohery, Cornelius Leo, 56 W. Arch Dr. Lake Worth, Florida 33460
1959 Dobson, John Patrick, G. Pierce Wood Mem'l Hosp., Arcadia, Florida 33821
1968 Dudley, James Patrick, 194 No. Carmelina Ave., Los Angeles, California 90049
1976 Feuer, Charles R., 30 North Reeves Ave., Guilford 06437
1945 Gratz, Charles Murray, 1 Tom's Point La., Port Washington, New York 11050
1940 Grigas, John E., P.O. Box 162, Basking Ridge, New Jersey 07920
1969 Harrell, Samuel Ronald, 4573 Del Monte Ave., San Diego, California 92107
1960 Henry, Philip Daniel, 299 Seymour Ave., Derby 06418
1974 Hicks, George William, 229 Forest Blvd., Indianapolis, Indiana 46240
1955 Huss, Geraldine Rider, 514 Nordhoff Dr., Leonia, New Jersey 07605
1944 Inkster, James H., 5 Hastings Ave., Keene New Hampshire 03431
1959 Jensen, Philip Bailey, Tallboys, Hammerfield Dr., Abinger Hammer, Surrey, England
1955 Keleman, Eugene, 31423 South Coast Highway, South Laguna, California 92677
1938 Keys, Robert Cathcart, Winchester, Kansas 66097
1967 King, Edmund Joseph, Rt., 163, Falls Village 06031
1970 Kraus, George, Yale Un. Health Services, New Haven 06520
1940 Lengyel, Paul, 325 Wawona, San Francisco, California 94109
1927 Levy, Maurice Noel, 9660 W. Bay Harbor Dr., Bay Harbor Islands, Florida 33154
1933 Lockwood, Jane, Baldwin Hill Rd., New Preston 06777
1950 Losito, Amedeo Joseph, 2888 S. E. Italy, Port St. Lucie, Florida 33452
1948 Luria, Sydney, 2100 E. Hallendale Beach Blvd., Hallandale, Florida 33009
1928 McGourty, Andrew Frederick, Box 77, Norfolk
1948 McIlroy, Patrick Thomas, P. O. Box 197, Danbury, New Hampshire 03230
1936 Moore, Clifford Douglas, 129 E. Lake Dr., Lehigh Acres, Florida 33936
1944 Morrissett, Leslie Emerson, 5104 Riverside Dr., Richmond, Virginia 23225
1938 Murphy, Charles Anthony, Champlain Rd., Chatham, Massachusetts 02633
1951 Murphy, John Christopher, 531 East 20th, New York City, New York 10010
1925 Nichols, Charles W., A.I.M. Med. Center, Wellfleet, Mass. 02667
1945 Pearce, Marvin G., 1408 Rabb Rd., Barton Ter., Austin, Texas 78704
1939 Reynolds, Whitman Mead, R. F. D. 1, Box 77A Stonington 06378
1935 Rogers, Robert Page, Box 245, North Chatham, Massachusetts 02650
1940 Shaw, Lillian Eloise, Baldwin Hill Rd., New Preston 06777
1958 Simon, H. Joseph, V. A. Hospital, Waco, Texas 76708
1930 Sollosy, Alexander, 3200 Palm-Aire Dr. No., Apt. 404 Pompano Beach, Florida 33060
1949 Spannaus, Fred, C., Jr., Rt. 199, Roxbury 06783
1950 Spinelli, Nicholas P. R., 103 Housatonic Dr., Devon 06460
1935 Strayer, Luther Milton, P. O. Box 366, Lancaster, New Hampshire 03584
1938 ter Kuile, Roger Couvelle, 117 W. Main, Lebanon, Illinois
1925 Tolk, Nathan Robert, 2780 S. Ocean Blvd., Palm Beach Florida 33480
1959 Tucker, Elizabeth Mackay, 708 Irving Ave., Syracuse, New York 13210
1957 Van Poznak, Frederick, #2 Rivermeade Ct., Ranelagh Gardens, London England SW6-3RT
1971 Walker, Granville Inman, Jr., The Chase Manhattan Bank, New York, New York 10015
1958 Willis, Thayer, 2757 N.E. 31st, Lighthouse Point, Florida 33064
1953 Zehrung, William John, P. O. Box B, New Milford 06776

Hartford County Association

President: James C. Johnson, Jr., 90 Washington, Hartford 06115

Vice-President: Merrill B. Rubinow, 320 Main, Manchester 06040

Secretary-Treasurer: Arthur D. Keefe, 477 Connecticut Blvd. East Hartford 06108

Councilor: David Robinson, 21 Woodland, Hartford 06105

Associate Councilors:

Lawrence B. Ahrens, 300 Main, New Britain 06051
Joseph S. Sadowski, 212 Ashley, Hartford 06105

Executive Director: Mr. Joseph L. Gordon

Executive office: 1000 Asylum Ave., Hartford 06105
Annual Meeting, First Wednesday in April
Semi-Annual Meeting, Fourth Wednesday in September

AVON 06001

1976 Candels, Lothar Richard, 2 Mountain View Ave.
1974 Cohen, Ronald H., 18 West Avon Rd.
1975 Farraye, Joseph J., 20 West Avon Rd.
1964 Harrop, James Shields, 51 Hitchcock Lane
1961 Koff, Arnold M., Avon Professional Center
1963 Kresge, Dwight J., 70 Fox Den Rd.
1961 Lynch, Mark Edward, Avon Professional Center
1943 Marinaro, Nicholas Anthony, 51 Westridge Dr.
1973 Norbert, Gary Francis, 18 West Avon Rd.
1959 Orgun, Ibrahim Necmi, 44 Craigmore Circle
1973 Schubert, Anthony Stephen, 20 West Avon Rd.
1931 Standish, Welles Adams, 24 Crocus Lane
1941 Wiepert, William Murray, West Avon Rd.
1949 Williams, William Edward, West Avon Rd.

BERLIN 06037

1932 Seibert, Alfred Frank, 1511 Farmington Ave.

BLOOMFIELD 06002

1956 Alderman, Melville Yale, 701 Cottage Grove Rd.
1949 Bagnall, Richard Salmon, 616 Bloomfield Ave.
1965 Borden, Walter A., 701 Cottage Grove Rd.
1952 Carrabba, Salvatore R., 701 Cottage Grove Rd.
1943 Chester, Lewis L., 701 Cottage Grove Rd.
1975 Cohen, Robert B., 701 Cottage Grove Rd.
1975 Das, Amal, 701 Cottage Grove Rd.
1975 Edelstein, Barbara L., 701 Cottage Grove Rd.
1974 Elazegui, Rosalinda A., Conn. General Life Ins. Co.
1971 Gandel, Paul Nelson, 701 Cottage Grove Rd.
1974 Geetter, Albert L., 701 Cottage Grove Rd.
1931 Hirshberg, Manuel Shelton, 23 Oak Lane
1963 Hurwit, Albert Coleman. 701 Cottage Grove Rd.
1956 Knox, A. E. Hertzler, 125 Wadhams Rd.
1965 Levine, Marvin, 41 Jerome Ave.
1933 Liebowitz, Seymour A., 701 Cottage Grove Rd.
1952 Marshall, Daniel, 701 Cottage Grove Rd.
1975 Miller, Bennett, 41 Jerome Ave.
1974 Miller, Joel Michael, 711 Cottage Grove Rd.
1947 Miller, Seymour M., 8 West View Dr., Apt. F.
1960 Newell, Richard Clark, 711 Cottage Grove Rd.
1962 Richman, Sidney Morris, 701 Cottage Grove Rd.
1973 Rimai, Mervyn Leon, 1 Regency Dr.
1974 Saxon, Ronald J., 701 Cottage Grove Rd.
1949 Schloss, Walter Amson, 701 Cottage Grove Rd.
1962 Schmoll, Ralph Dale, 711 Cottage Grove Rd.
1964 Sereda, Lawrence Evans, 701 Cottage Grove Rd.
1936 Slossberg, David Seymour, 1045 Blue Hills Ave.
1973 Srinivasan, Jane Padmini, 1 Regency Dr.
1971 Ungar, Joseph Irwin, 1 Regency Dr.
1958 Vecchiolla, John Anthony, 701 Cottage Grove Rd.
1971 Weiss, Stephen A., 701 Cottage Grove Rd.
1975 Werner, Herbert Jay, 41 Jerome Ave.
1973 Wyse, L. Arnold, 701 Cottage Grove Rd.

BRISTOL

1968 Alisberg, Norman, Bristol Hospital 06010
1976 Allam, Abdel F., 196 Woodland 06010
1966 Argall, Temby Richie, Bristol Hospital
1957 Ayotte, Lionel Alfred, 45 Prospect 06010
1976 Bae, June G., 88 Goodwin 06010
1970 Bagdasarian, Ara Der, 105 Woodland 06010
1975 Baltazar, Arturo Erfe, 61 Bradley 06010
1973 Baptist, Vincent, 291 Queen 06010
1967 Bean, Kenneth Forte, 199 Riverside Ave. 06010
1934 Beatrice, Alphonse Anthony, 331 Main 06010
1948 Becker, Arnold H., 300 Main 06010
1958 Becker, Irwin William, 300 Main 06010
1936 Bird, Frederick Stamford, 12 Collins Rd. 06011
1947 Brezina, Philip Savage, 105 Woodland 06010
1946 Ciccarelli, Armanno William, 291 Queen 06010
1975 Diaz, Oliver Balicat, 61 Bradley 06010
1975 Doura, Marc Edouard, 472 Stafford Ave. 06010
1956 Driscoll, Arthur Joseph, 123 Maple 06010
1962 Erami, Mohammad, 75 High 06010
1973 Estela, Jose A., 94 Bellevue Ave. 06010
1976 Falk. Stuart, 3 Woodland 06010
1973 Flores, Pacifico G., 88 Goodwin 06010
1935 Flynn, William Henry, 12 Carleton Pl. 06010
1964 Fox, Edward Francis, 300 Main 06010
1947 Furniss, William Ernest, 190 Summer 06010
1958 Glass, Herbert Lee, 300 Main 06010
1937 Hall, Martin Irving, 752 Hill 06010
1946 Hanley, J. Bainbridge, Peacedale 06010
1969 Hennessey, Brian Charles, 100 Goodwin 06010
1952 Hershey, David Daniel, 101 Woodland 06010
1948 Hershman, Harry Herbert, 122 Maple 06010
1954 Holden, Wesley Wiberg, 291 Queen 06010
1963 Ill, Martin F., 291 Queen 06010
1962 Jensen, Gerald Otto F., 780 Farmington Ave. 06010
1975 Kaye, David Elliot, 300 Main 06010
1975 Kish, Leslie Stanley, Bristol Hospital 06010
1964 Labraico, James Michael, 51 High 06010
1951 LaPorte, Thomas Francis V., 33 Puritan Rd. 06010
1968 McClure, Phillip Hutson, 300 Main 06010
1965 McDermott, George Michael, 35 Woodland 06010
1974 Mendoza, Jose Porciuncula, 8 Collins Rd., 06011
1963 Mirabelli, Vittorio, 11 Harrison 06010
1974 Murray, Walter Charles, 122 Maple 06010
1973 Oceretko, Jaroslav, 56 Harrison 06010
1952 Perry, Douglas Dards, 1 Bellevue Ave. 06010
1946 Purney, John, 300 Main 06010
1970 Rappaport, Lawrence Neil, 300 Main 06010
1962 Reiss, Oscar, 202 Queen 06010
1972 Robles, Mario Jose, 88 Goodwin 06010
1959 Russell, Donald Grant, 300 Main 06010
1961 Seguljic, Nicholas J., 202 Queen 06010
1969 Selsky, Leonard Mark, 683 Farmington Ave. 06011
1939 Tirella, Fred Francis, 85 Belden Gardens Dr. 06010
1957 Williamson, Robert James, 104 Stearns 06010
1934 Winters, Hyman W., 58 Bel Eden Gardens Dr. 06010
1960 Winters, Thomas Edgar, 103 Woodland 06010
1975 Wong, Shue W., Bristol Hospital 06010

COLLINSVILLE 06022

1949 Diters, Edward Nelson, Gildersleeve Ave.
1966 Lawlor, Eugene Francis, RFD #2
1969 West, Harold Frederic, 64 Maple Ave.

EAST HARTFORD

1948 Acqua, Louis C., 40 Elm 06108
1969 Berger, Jonathan, 477 Connecticut Blvd. 06108
1967 Cameron, Ian Richard, 111 Founders Plaza 06108
1976 Cihak, Helena, 477 Connecticut Blvd. 06108
1970 Danigelis, James Arthur, 477 Connecticut Blvd. 06108
1948 Danyliw, Joseph Michael, 477 Connecticut Blvd. 06108
1976 Daukas, Charles, 809 Main 06108
1968 DeFusco, Leonard Anthony, 477 Connecticut Blvd. 06108
1962 Fitzgerald, James Richard, 477 Connecticut Blvd. 06108
1966 Fogg, Lyman B., 477 Connecticut Blvd. 06108
1946 Golino, Emanuel Francis, 164 Main 06118
1957 Gustafson, Walter Elmer, 45 Connecticut Blvd. 06108
1955 Keefe, Arthur Dillon, 477 Connecticut Blvd. 06108
1965 Knights, William, 477 Connecticut Blvd. 06108
1974 Krenicky, Peter T., 477 Connecticut Boulevard 06108
1955 Loewenberg, Peter Christian, 33 Brown 06118
1934 Lublin, Raymond, 751 Main 06108
1939 Mirabile, Thomas Joseph, 59 Burnside Ave. 06108
1947 Murphy, John Joseph, 27 Wells Ave. 06108
1965 Palma, Joseph Francis, 477 Connecticut Blvd. 06108
1975 Pina, Burt D., 477 Connecticut Blvd. 06108
1953 Saunders, William Long, 12 Mayflower 06110
1948 Sirota, Harvey H., 3 Saunders 06108
1955 Stearns, Colby Starnaman, 447 Connecticut Blvd. 06108
1967 Sullivan, Robert Michael, 447 Connecticut Blvd. 06108
1974 Tandon, Kishan Narain, 477 Connecticut Blvd. 06108
1942 Trantolo, Arthur, 1559 Main 06108
1973 Zimmerman, Richard Steven, 49 Connecticut Blvd.

EAST HARTLAND 06027

1938 Birge, Henry L., North Granby Rd.

ELMWOOD 06110

1932 Romaniello, Rocco John, 1086 New Britain Ave.

ENFIELD 06082

1976 Durrani, Jehangir, 810 Enfield
1960 Figueroa, Francis Javier, 258 Hazard
1970 Himelstein, Samuel Carl, 810 Enfield
1968 Hollander, Jules S., 5 North Main
1971 Mathews, John, Enfield Professional Center
1974 Minasian, Doris Jean, Enfield Professional Ctr., Hazard Ave.

FARMINGTON 06032

1946 Barbour, Paul Humphrey, Jr., 2 High
1970 Blechner, Jack Norman, Univ. Conn. School of Medicine
1970 Burnham, Bruce E., 340 Main
1970 Carignan, Roland Zephirin, 26 Lake Shore Dr.
1973 Choi, Chang Song, 10 Candlewood La.
1964 Davenport, John Joseph, Jr., 287 Main
1970 Freymann, John Gordon, 37 Main
1975 Galvin, J. Robert, Univ. Conn. Health Ctr.
1971 Gross, Elliot M., P.O. Box 427
1960 Hillemeir, Herbert, 51 Dorset Lane
1968 Hinz, Carl Frederick, Jr., Univ. Conn. School of Medicine
1975 Hochman, Howard Irwin, UConn. Med. Cty.
1959 Jones, Emily Edwards, 273 Main
1974 Kang, Juliana Haeng Cha, 10 Candlewood La.
1974 Katz, Alfred J., 209 Farmington Ave.
1967 Leach, Charles Nelson, Jr., 174 Main
1968 Lepow, Irwin Howard, Univ. Conn. Health Center
1968 Lepow, Martha Lipson, Univ. Conn. Health Center
1974 MacDonald, Robert James, 24 Ridgeview Dr.
1970 Massey, Robert Unruh, Univ. Conn. School of Medicine
1963 Mauck, F. Taylor, 1 Mill Lane
1933 Mirabile, Charles S., 34 Mountain Rd.
1969 Morse, Edward Everett, Univ. Conn. Health Center
1941 O'Connell, Enos Joseph, 12-B Greenbriar Dr.
1970 O'Rourke, James, Univ. Conn. Health Center
1966 Patterson, John W., Univ. of Conn. Health Ctr.
1929 Pike, Maurice Mitchell, Old Mountain Rd.
1976 Puri, Savita, Univ. Conn. Health Center
1957 Sherpick, William Edwards, 1 Mill Lane
1975 Silverman, Samuel Morris, 263 Farmington Ave.
1976 Spencer, Richard Paul, Univ. Conn. Health Center
1963 Stockwell, Richard Matheson, Univ. Cinn. Health Center
1975 Sunderman, Carolyn R., 139 Mountain Spring Rd.
1968 Sunderman, Frederick William, Jr., Univ. Conn. School of Medicine
1969 Toomey, James Michael, Univ. Conn. Health Ctr.
1948 Von Salzen, Charles F., 93 Mallard Dr.
1966 Walker, James Eliot Cabot, Univ. Conn. Health Ctr. Ctr.

FORESTVILLE 06011

1931 Frost, Lawrence Hubbard, 14 Fireside Lane

GLASTONBURY 06033

1976 Balakrishna, Srimathi, 2900 Main
1960 Baxter, Marion Florence, 315 Tall Timbers Rd.
1970 Drury, Robert Warwick, 2900 Main
1935 Griswold, Edwin Monroe, 2869 Main
1967 Gundersen, Charles Arthur, 301 Tall Timbers Rd.
1973 Horrigan, Thomas Henry, 87 Karen Lee Rd.
1950 Lohman, William Henry, 2900 Main
1973 McDonald, June, 2638 Main
1971 Mintell, David Frederick, 124 Hebron Ave.
1975 O'Connor, Christopher Francis, 2900 Main
1949 Platz, Edward John, 100 Brookhaven Dr.
1957 Preble, Charles Richmond, 2638 Main
1969 Price, John Thomas, 2900 Main
1939 Raffa, Joseph, 2638 Main
1961 Rentsch, Juanita Brown, 242 Hubbard
1961 Rentsch, Samuel Burton, Jr., 242 Hubbard
1946 Ricca, Renato A., 28 Ripley Rd.
1961 Taylor, Richard Fiske, 259 Three Mile Rd.
1975 Vacek, William John, 124 Hebron Ave.

SOUTH GLASTONBURY 06073

1958 Bellucci, Aldo Louis, 34 Lakewood Rd.

GRANBY 06035

1968 Barwick, Peter E., 50 Hartford Ave.
1975 Blomquist, William Stewart, 50 Hartford Ave.
1953 Dwyer, Ruth Tychsen, 261 Salmon Brook
1952 Dwyer, William John, 261 Salmon Brook

HARTFORD

1972 Ahn, William B., 85 Jefferson 06106
1961 Alden, John Ordway, 151 Farmington Ave. 06115
1975 Alder, William C. 660 Prospect Ave. 06105
1975 Allan, Thomas Renaud, 85 Jefferson 06106

1941 Allen, John Clinton, Hartford Hospital 06115
1974 Allmendinger, Philip D., 85 Jefferson 06106
1970 Allport, Vernon Garfield, 99 Pratt 06103
1969 Alter, Burton Norman, 85 Jefferson 06106
1968 Amato, Peter Robert, 21 Woodland 06105
1970 Anastasi, Anthony Frank, 21 Woodland 06105
1953 Anderson, Gustav Walter, 85 Jefferson 06106
1958 Andrews, A. Ezra, Mt. Sinai Hospital 06112
1936 Apter, Harry, 99 Pratt 06103
1932 Arons, Milton Robert, 750 Main 06103
1976 Aronson, Alfred Lars, Mt. Sinai Hospital 06112
1952 Aseltine, Deal T., Jr., 283 Collins 06105
1965 Asuncion, Celedonio Manuel, St. Francis Hospital 06105

1964 Babcock, Albert Lethiccq, 100 Retreat Ave. 06106
1976 Babenco, George O., St. Francis Hospital 06105
1972 Baggish, Michael S., Mt. Sinai Hospital 06112
1968 Bagnall, John S., 85 Jefferson 06106
1970 Bailey, Richard H., 1 American Row 06103
1959 Baker, Gerald Lynn, 85 Jefferson 06106
1957 Baltrucki, Henry Chester, 140 Woodland 06105
1954 Barald, Fred Charles, 114 Woodland 06105
1964 Bartus, Stanislaus Anthony, 85 Jefferson 06106
1958 Basile, John X. R., 140 Woodland 06105
1975 Bass, David M., 85 Jefferson 06106
1972 Basu, Subrata K., 140 Woodland 06105
1949 Beakey, John Francis, 287 Collins 06105
1957 Beck, Roger Seaton, 85 Jefferson 06106
1948 Beckett, Ronald Stewart, Hartford Hospital 06115
1944 Beebe, John Taylor, 85 Jefferson 06106
1934 Beizer, Edmund, 56 Garden 06105
1950 Bellizzi, Joseph John, 60 Gillett 06105
1962 Bendett, Rodman Jordan, 60 Gillett 06105
1968 Berland, Robert Howard, 21 Woodland 06105
1962 Berlin, Bert B., 85 Jefferson 06106
1947 Bernstein, Louis, 21 Woodland 06105
1968 Black, James C., 1680 Albany Ave. 06105
1974 Blanchard, Bradford Martin, 85 Jefferson 06106
1975 Bloom, George Peter, 85 Jefferson 06106
1941 Bobrow, Aaron, 500 Blue Hills Ave. 06112
1963 Boelhouwer, Cornelis, 200 Retreat Ave. 06115
1962 Bonney, Henry Thurston, Hartford Hospital 06115
1957 Book, Donald Thompson, 151 Farmington Ave. 06115
1967 Boren, Charles Wilson, 200 Retreat Ave. 06115
1970 Bower, Bruce F., 100 Retreat Ave. 06106
1959 Bowers, George Nelson, Jr., 80 Seymour 06115
1951 Braceland, Francis J., 200 Retreat Ave. 06115
1975 Bradley, Donald F., Jr., 85 Jefferson 06106
1941 Brandon, Kenneth Francis, 128 North Oxford 06105
1969 Brenneman, Austin Russell, 85 Jefferson 06106
1946 Brewster, William B., Jr., 85 Jefferson 06106
1972 Bridburg, Richard Martin, 200 Retreat Ave 06106
1974 Broadhead, Alan John, 200 Retreat Ave 06106
1976 Bronson, William Raymond, Hartford Hospital 06115
1975 Brown, Borden, St. Francis Hospital 06105
1960 Brown, Donald Leroy, Hartford Hospital 06115
1970 Brown, Louis, 21 Woodland 06105
1954 Brown, Richard Braddock, 400 Washington 06106
1975 Brown, Stephen Allen, 140 Woodland 06105
1942 Bruskin, Chaim Elias, 1840 Park 06106
1966 Bucknam, Charles Allen, 100 Retreat Ave. 06106
1970 Bulaong, Rodolfo Gana, 64 Garden 06105
1948 Bunce, James Merrill, 85 Jefferson 06106
1968 Burchell, R. Clay, Hartford Hospital 06115
1950 Burns, John Edward, 140 Woodland 06105
1949 Butterfield, Walter Lamont, Jr., 85 Jefferson 06106
1957 Caldarelli, Raymond August, 140 Woodland 06105
1950 Calio, James Vincent, 21 Woodland 06105
1972 Calogero, John A., 212 Ashley 06105
1947 Campbell, Robert Harold, 85 Jefferson 06106
1948 Carangelo, John, 140 Woodland 06105
1954 Carlton, Lawrence S., 560 Hudson 06106
1960 Carpentieri, Joseph, 21 Woodland 06105
1948 Cartland, John Everett, Jr., 85 Jefferson 06106
1965 Casale, Albert Joseph, 140 Woodland 06105
1963 Castagno, Marion MacDonald, 215 Washington 06106
1949 Castagno, Rowe Anthony, 215 Washington 06106
1946 Chaucer, Norton G., 56 Coventry 06112
1976 Cinti, Dorothy Carroll, St. Francis Hospital 06105
1971 Clark, Isaiah, 520 Albany Ave. 06120
1969 Clarke, William Augustin, Conn. Gen. Life Ins. Co. 06115
1959 Cobb, Richard J., 50 Canterbury 06112
1961 Coelho, Julio Nunes, 64 Garden 06105
1936 Cogswell, Lawrence Perley, 85 Jefferson 06106
1938 Cohn, Samuel Hills, 111 Pearl 06103
1948 Cole, Milton Julius, 365 Blue Hills Ave. 06112
1965 Coley, Geoffrey MacDonell, 85 Jefferson 06106
1964 Collias, James Charles, 85 Jefferson 06106
1954 Conant, Roger Garrett, St. Francis Hospital 06105
1973 Conklin, Thomas J., 200 Retreat Ave. 06106
1949 Conway, Edward Joseph, 85 Jefferson 06106
1955 Cooke, Ronald Wilbur, 85 Jefferson 06106
1960 Cooper, Paul A., 85 Jefferson 06106
1944 Cramer, Sidney Leo, 21 Woodland 06105
1963 Crawford, Jerry, 21 Woodland 06105
1969 Crombie, H. David, Jr., 85 Jefferson 06106
1962 Cronin, Robert John, 85 Jefferson 06106
1955 Cullen, Chester Francis, 140 Woodland 06105
1954 Cullina, Joseph Charles, St. Francis Hospital 06105
1969 Cunin, Burton Maurice, 100 Constitution Plaza 06103
1961 Curis, Francis Thomas, 51 Gillett 06105
1968 Curran, John Joseph, Institute of Living 06106
1946 Curran, Timothy Leonard, 106 Gillett 06105

1972 daCosta, Jose Ferreira, 631 Park 06106
1974 Dake, Peter Denteh, 31 Woodland 06105
1970 D'Alotto, John Anthony, 111 Gillett 06105
1955 Daniels, Evans Howard, Jr., 520 Albany Ave. 06120
1968 Dauphinais, Richard Murray, St. Francis Hospital 06105
1972 DeCarolis, Kenneth A., 85 Jefferson 06106
1954 deChabert-Ostland, Jean Guido, 60 Gillett 06105
1966 DeGraff, Arthur C., Jr., 85 Jefferson 06106
1952 Delgado-Fourzan, Enrique, 200 Retreat Ave. 06106
1946 Delligan, Francis William, 31 Woodland 06105
1966 DeMaio, John Thomas, 283 Collins 06105
1947 Deming, Archibald Staley, 85 Jefferson 06106
1949 Deming, Edward Griswold, 85 Jefferson 06106
1954 Denton, Cleveland Ray, 85 Jefferson 06106
1931 DePasquale, Francis Lawrence, 1992 Broad 06114
1937 DePasquale, John Anthony, 182 Collins 06105
1975 Deutsch, Joel, 500 Blue Hills Ave. 06112
1973 Dickson, Charles Malcolm, 85 Jefferson 06106
1931 Dion, Asa Joseph, 207 Washington 06106
1944 Dion, Julien Andre, 207 Washington 06106
1966 Dobrow, Robert Jay, 85 Jefferson 06106
1944 Doerr, William John, 690 Prospect Ave. 06105
1955 Doherty, Robert C., 26 Woodland 06105
1951 Donnelly, John, 200 Retreat Ave. 06106
1958 Donovan, James Frederic, 85 Jefferson 06106
1957 Donovan, Thomas Joseph, 85 Jefferson 06106
1965 Dougherty, Anthony James, St. Francis Hospital 06105
1962 Dowling, Kevin Vernon, 140 Woodland 06105
1974 Duboczy, John Bela, 400 Washington 06106

1971 Dunn, Harrison, 171 Girard Ave. 06105
1951 Dunsmore, Rembrandt Harvey, 85 Jefferson 06106
1946 Dushane, Joseph Edward, 85 Jefferson 06106

1954 Eagan, E. Cecil, 114 Woodland 06105
1971 Edelstein, Stanley W., 449 Farmington Ave. 06105
1965 Edkin, Robert Edward, 21 Woodland 06105
1948 Ellis, William Avery, 111 Gillett 06105
1974 Ellison, Lee H., 85 Jefferson St. 06106
1969 Enowitch, Bennett, Irving, 60 Washington 06106
1962 Ergin, Muceddit Tahsin, 85 Jefferson 06106
1973 Evans, Jerome Edward, Institute of Living 06106

1975 Fahy, Richard A., 660 Prospect Ave. 06106
1961 Faiaz, Esmail K., 21 Woodland 06105
1949 Fairlie, Chester Wilson, Jr., 85 Jefferson 06106
1967 Fauliso, Richard Joseph, 111 Gillett 06105
1919 Fay, William James, 98 Garden 06105
1967 Feldman, Paul, 60 Gilbert 06105
1974 Feller, Clifford Warren, 21 Woodland 06105
1975 Fenelon, Ernst, 1229 Albany Ave. 06112
1974 Ferrero, Vittorio, 400 Washington Ave. 06106
1957 Fieldman, Arnold, Hartford Hospital 06115
1954 Fierberg, A. Arthur, 21 Woodland 06105
1967 Fisher, Robert Lyle, 85 Jefferson 06106
1962 Fishman, Ronald Stanley, 60 Gillett 06105
1951 Flaherty, Morgan Vincent, 36 Woodland 06105
1943 Fleisch, Milton Carl, 64 Garden 06105
1969 Flescher, Robert, 85 Jefferson 06106
1948 Foohey, Fleur Cornelius, 146 Jefferson 06106
1964 Fortin, Victor Louis, Jr., St. Francis Hospital 06105
1973 Foster, James Henry, 85 Jefferson 06106
1964 Fox, Brendan Michael, 210 Ashley 06105
1947 Franco, John Estrela, 206 Ashley 06105
1968 Franklin, John B., 100 Retreat Ave. 06106
1968 Frederick, Edward J., 85 Jefferson 06106
1956 Frederickson, Robert William, 85 Jefferson 06106
1956 Freedman, Myron Earl, 60 Gillett 06105
1962 Friend, Hugh Borden, 100 Retreat Ave. 06106

1967 Gahm, Norman Henry, 85 Jefferson 06106
1974 Galen, Malcolm Arthur, 7 Sisson Ave. 06106
1937 Galinsky, David, 35 North Whitney 06105
1967 Gambarini, Alberto Jose, 140 Woodland 06105
1971 Gaudio, Alexander R., 100 Retreat Ave. 06106
1967 Geary, Frederick Lawrence, 283 Collins 06105
1970 Geary, William John, 283 Collins 06105
1969 Geetter, David Meranski, 212 Ashley 06105
1931 Geetter, Isidore Stolper, 92 Fern 06105
1959 George, Anastasios B., 85 Jefferson 06106
1972 Gerber, Joanna Seydel, 85 Jefferson 06106
1949 Giardi, Leo Paul, 561 New Britain Ave. 06106
1963 Giarnella, Egidio, 285 Franklin Ave. 06114
1970 Gibbons, John Martin, Jr., 114 Woodland 06105
1941 Gibson, Forrest Davis, 85 Jefferson 06106
1975 Giligian, John, 21 Woodland 06105
1937 Giuliano, Sebastian, 434 Franklin Ave. 06114
1957 Given, James Bartley, 85 Jefferson 06106
1962 Glassman, Herman H., 60 Gillett 06105
1934 Glaubman, Henry Mitchell, P. O. Box 26, Blue Hills Station 06112
1967 Glueck, Bernard Charles, 400 Washington 06106
1965 Godar, Thomas Joseph, St. Francis Hospital 06105
1968 Godlash, Kenneth Michael, 79 Retreat Ave. 06115
1966 Gold, Bertram, St. Francis Hospital 06105
1968 Gold, Herbert, 99 Pratt 06103
1936 Gold, Louis Henry, 21 Woodland 06105
1965 Goldberg, Morton Harold, 50 Gillett 06105
1930 Goldenberg, Jacob Joseph, 832 Albany Ave. 06112
1952 Goldenberg, Philip Theodore, 140 Woodland 06105
1949 Goldenthal, Carol, 132 Jefferson 06106
1963 Goldman, Philip H., 99 Pratt 06103
1967 Golub, Grant Richard, 80 Seymour 06115
1962 Gorman, Arthur Thomas, 100 Retreat Ave. 06106
1970 Gorman, David Joseph, 210 Ashley 06105
1954 Gossling, Harry Robert, 85 Jefferson 06106
1935 Gould, Max Martin, 387 Blue Hill Ave. 06112
1972 Grace, Thomas William, St. Francis Hospital 06105
1975 Graf, Thomas Michael, 387 Blue Hills Ave. 06112
1973 Graydon, Roland James, II, 85 Jefferson 06106
1969 Grayson, Donald Ross, 60 Washington 06106
1943 Greene, Gerald S., 85 Jefferson 06106
1971 Grey, Neil Jay, 60 Gillett 06105
1973 Grody, Marvin Henry, 50 Gillett 06105
1952 Gross, Norman David, 140 Woodland 06105
1974 Guillette, William, 151 Farmington Ave. 06115
1947 Gurwitz, Jack, 21 Woodland 06105

1969 Haksteen, John Jacob, 85 Jefferson 06106
1975 Hall, Francis M., 140 Woodland 06105
1970 Halligan, Thomas Joseph, Jr., 60 Gillett 06105
1954 Hamilton, T. Stewart, 80 Seymour 06115
1947 Hamlin, Charles H., 85 Jefferson 06106
1952 Hannan, William Stephen, 140 Woodland 06105
1975 Hardman, Donald R., 85 Jefferson 06106
1965 Hardy, James H., 85 Jefferson 06106
1938 Harris, Louis David, 242 Trumbull 06106
1957 Hart, William Edmund, 77 Canterbury 06112
1974 Hasson, Jack, Mt. Sinai Hospital 06112
1960 Haugh, John Denis, 140 Woodland 06105
1976 Hawkins, Harold Berton, St. Francis Hospital 06105
1937 Hazen, Donald Robert, 36 Woodland 06105
1968 Healy, Joseph William, 287 Collins 06105
1965 Hedberg, David Leigh, 21 Woodland 06105
1959 Henken, Ernest Marvin, 21 Woodland 06105
1931 Hennessy, James Joseph, 1039 Asylum Ave. 06105
1972 Hensley, Ronald Verne, 400 Washington 06106
1974 Herzog, Alfred, 85 Jefferson St. 06106
1972 Hewett, William Joseph, 100 Retreat Ave. 06106
1975 Hewitt, J. Kent, 21 Woodland 06105
1949 Hickcox, Curtiss Bronson, 85 Jefferson 06106
1969 Hickmon, Ned, 140 Woodland 06105
1976 Hild, David H., 100 Retreat Ave. 06106
1974 Hill, David Albert, 100 Retreat Ave. 06106
1974 Hill, Thomas Michael, Institute of Living 06106
1956 Himelstein, Monroe, 85 Jefferson 06106
1934 Hirschfeld, Otto Max, 140 Woodland 06105
1969 Hoffman, Harry B., 85 Jefferson 06106
1975 Hornblow John Terry, 85 Jefferson 06106
1968 Horowitz, Benson Jay, 449 Farmington Ave. 06105
1955 Houck, John Howard, 200 Retreat Ave. 06106
1949 Howard, Laura Koon, 400 Washington 06106
1950 Howe, Edward Redfield, 85 Jefferson 06106
1959 Hughes, Calvin Thomas, Jr., 36 Gillett 06105
1962 Hull, Crawford, Hartford Hospital 06115
1953 Hulme, Stephen A., St. Francis Hospital 06105
1936 Hurwitz, George Hillel, 99 Pratt 06103
1969 Hurwitz, Myron Robert, 660 Prospect Ave. 06105
1960 Hyun, Jayson, St. Francis Hospital 06105

1970 Iger, Howard G., 200 Retreat Ave. 06106
1968 Izard, Mark Whitaker, 85 Jefferson 06106

1961 Jacuch, Michael, 245 Wethersfield Ave. 06114
1934 James, Lewis Paul, 104 Gillett 06105
1948 Janzen, Arnold Herbert, 85 Jefferson 06106
1961 Jeresaty, Robert M., St. Francis Hospital 06105
1961 Johnson, Donald William, 85 Jefferson 06106
1951 Johnson, James C., Jr., 90 Washington 06115
1941 Johnson, Paul, 85 Jefferson 06106
1970 Jones, Richard F., III, 100 Retreat Ave. 06106
1959 Josel, Mark, 21 Woodland 06105

1928 Kalin, Jacob Isaac, 299 Farmington Ave. 06105

1963 Kallfelz, Alois, St. Francis Hospital 06105
1955 Kaplan, Bernard Joseph, 21 Woodland 06105
1945 Karpe, Richard, 236 Oxford 06105
1924 Katz, Henry, c/o CBT Trust Dept., 1 Constitution Plaza 06115
1950 Kay, Richard, 85 Jefferson 06106
1960 Keefe, William Peter, 240 Ashley 06105
1920 Kelly, Claude Currie, 85 Jefferson 06106
1972 Kelly, Donald Robert, 85 Jefferson 06106
1950 Kemler, R. Leonard, 21 Woodland 06105
1960 Kiley, Robert Francis, 85 Jefferson 06106
1954 Kingston, Paul J., 140 Woodland 06105
1966 Klatsky, Alan Usher, 100 Retreat Ave. 06106
1946 Klein, Joseph, 85 Jefferson 06106
1964 Kligerman, Sidney, 49 North Beacon 06105
1958 Knight, Harold Fuller, 140 Woodland 06105
1958 Knox, Kenneth Raven, 100 Retreat Ave. 06106
1970 Koff, Marvin Saul, 660 Prospect Ave. 06105
1954 Kosar, Walter Philip, 85 Jefferson 06106
1974 Kosto, Bernard, 85 Jefferson 06106
1944 Krall, Irving Hadley, 99 Pratt 06103
1973 Kramer, Robert Allyn, Mt. Sinai Hospital 06112
1956 Krieger, James L., 85 Jefferson 06106
1962 Kuehn, Paul Gerhard, 85 Jefferson 06106
1964 Kugelman, Thomas Peter, 85 Jefferson 06106

1966 Laakso, William Bruce, 85 Jefferson 06106
1949 Lahey, William J., St. Francis Hospital 06105
1971 Lahiri, Bimalin, 114 Woodland 06105
1963 Landry, Arthur Bernard, Jr., 114 Woodland 06105
1962 Langmann, Robert D., 85 Jefferson 06106
1943 Lapenta, Rocco George, 1307 Albany Ave. 06112
1946 Larson, Albert Lloyd, One Tower Sq. 06120
1972 Lashgari, Manocher, 21 Woodland 06105
1975 Lassman. M. Nathan, 60 Gillett 06105
1976 Lazor, Michael Z., 85 Jefferson 06106
1951 Lee, William, Hartford Hospital 06115
1976 Lee, Wing Kwong, 500 Blue Hills Ave. 06112
1968 Lehman, William B., 85 Jefferson 06106
1962 Leicach, Mario, 85 Jefferson 06106
1956 Leonhardt, Charles George, Hartford Plaza 06115
1954 LeRoyer, C. Phillip, 1 Tower Sq. 06120
1975 Lessow, Richard Joseph, 85 Jefferson 06106
1933 Levin, Albert Eliot, 242 Trumbull 06103
1954 Levreault, Gerald Victor, Conn. Gen. Life Ins. Co. 06115
1965 Levy, Benjamin, 85 Jefferson 06106
1971 Linburg, Richard Murray, 85 Jefferson 06106
1973 Lindenberg, Leslie Barre, 85 Jefferson 06106
1965 Linnolt, Erik, 200 Retreat Ave. 06106
1974 Lippman, Leonard, 449 Farmington Ave. 06105
1953 Lipton, Harold, Ct. St. Dept. of Health, Crippled Children Section 06115
1937 Lischner, Moses David, 35 Whitney 06105
1967 Liss, Joseph Paul, St. Francis Hospital 06105
1946 Litter, Leo, 21 Woodland 06105
1949 Little, David Mason, Jr., 80 Seymour 06115
1974 Lloyd, Douglas Seward, 79 Elm 06115
1955 Lo Presti, Daniel A., 85 Jefferson 06106
1957 Low, Henry Bei Chung, 85 Jefferson 06106
1959 Luby, Meade Justin, 140 Woodland 06105
1963 Lucas, Joseph John, 17 Sisson Ave. 06106
1975 Lyall, Santokh Singh, 21 Woodland 06105
1970 Lynch, William A., 85 Jefferson 06106

1968 Macaulay, William Philip, 85 Jefferson 06106
1964 Mackay, Iain Murray, 85 Jefferson 06106
1919 Maislen, Samuel, 2138 Main 06120
1957 Malinconico, Lawrence Lorenzo, 136 Retreat Ave. 06106
1973 Manas, Alan, 100 Constitution Plaza 06103
1952 Mancall, Irwin Tuch, 21 Woodland 06105
1931 Mancoll, Morris Max, 242 Trumbull 06103
1967 Mancoll, William, 100 Retreat 06106
1949 Mann, Norman Morton, 21 Woodland 06105
1971 Mannix, Henry, Jr., 114 Woodland 06105
1975 Mantel, Fred, 21 Woodland 06105
1975 Marchbanks, Vance Hunter, Jr., 31 Woodland 06105
1976 Marino, Frank Sebastian, 51 Gillett 06105
1951 Markley, D. Norman, 422 Farmington Ave. 06105
1959 Marshall, Bruce Robert, 85 Jefferson 06106
1965 Martin, Robert Stockton, 80 Seymour 06106
1952 McAndrews, James Francis, 85 Jefferson 06106
1964 McCarthy, John Denis, 140 Garden 06105
1974 McCawley, Austin, St. Francis Hospital 06105
1975 McCloskey, Edwin M., St. Francis Hospital 06105
1962 McCooey, John Henry, 85 Jefferson 06106
1952 McCormick, James Michael, Hartford Hospital 06115
1938 McCrann, Donald Joseph, 36 Woodland 06105
1967 McGowan, George E., 85 Jefferson 06106
1950 McKnight, Robert Scott, 200 Retreat Ave. 06106
1968 McLean, Barbara Ann, St. Francis Hospital 06105
1949 McLean, Charles Ellsworth, Hartford Hospital 06115
1935 McNulty, Terence Francis, 21 Sisson Ave. 06106
1972 Mead, Peyton H., 85 Jefferson 06106
1972 Mendelson, Louis Moses, 85 Jefferson 06106
1973 Meridy, Howard William, 85 Jefferson 06106
1971 Milikow, Edward, 500 Blue Hills Ave. 06112
1937 Miller, Harry Bernard, 21 Woodland 06105
1975 Miller, Lawrence W., 100 Retreat Ave. 06106
1957 Mittelman, Jay Arnold, 21 Woodland 06105
1974 Mittelmann, Michael, 151 Farmington Ave. (W-A) 06115
1947 Moher, James J., 51 Gillett 06105
1954 Molloy, Robert Joseph, 60 Gillett 06105
1966 Moloney, David Richard, 21 Woodland 06105
1975 Mozzicato, Sebastian, 200 Retreat Ave. 06106
1972 Muangman, Pongsa-Pyn, 114 Woodland 06105
1973 Mucha, Theodore Frank, Institute of Living 06106
1970 Mueller, Robert Ernest, 85 Jefferson 06106
1975 Murphy, John D., St. Francis Hospital 06105
1972 Murray, James Hamilton, 85 Jefferson 06106
1969 Myerson, Manny, 1039 Asylum Ave. 06105

1957 Nakhoul, Jabbour, 21 Woodland 06105
1975 Narayanan, Chandra N., 500 Blue Hills Ave. 06112
1938 Neidlinger, William James, 85 Jefferson 06106
1962 Neill, Mather Humphrey, 151 Farmington Ave. 06115
1975 Newman, Richard Arthur, 85 Jefferson 06106
1946 Nichols, Edward, 85 Jefferson 06106
1947 Nichols, Frederick L., 85 Jefferson 06106
1952 Nicholson, Richard Edwin, 140 Garden 06105
1973 Nino, Alfredo F., 85 Jefferson 06106
1948 Nolan, John O'Leary, 206 Ashley 06105
1975 Nova, Sheldon, 21 Woodland 06105

1961 O'Brien, Frederick John, 60 Gillett 06105
1967 O'Brien, James Edward, 114 Woodland 06105
1944 O'Connell, John Daniel, 140 Woodland 06105
1952 O'Connell, Thomas Joseph, St. Francis Hospital 06105
1973 O'Hayre, Walter Louis, 55 Trumbull 06103
1973 O'Hurley, John George, 240 Ashley 06105
1953 Opinsky, Morton, 140 Woodland 06105
1955 Ormrod, John Kenneth T., 151 Farmington Ave. 06115
1955 Otis, Richard Dickinson, Hartford Hospital 06115
1976 Oviedo, Alvaro, 1039 Asylum Ave. 06105

1958 Painter, Robert Warren, 85 Jefferson 06106
1963 Palermino, Donata Angelo, 136 Retreat Ave. 06106
1975 Parker Lewis P., 100 Retreat Ave. 06106
1968 Pasternak, Herbert Stephen, 85 Jefferson 06106
1938 Peacock, Albert Upham, 85 Jefferson 06106
1976 Peck, Alexander S., Jr., 85 Jefferson 06106
1972 Pentz, Paul Gordon, 200 Retreat Ave. 06115
1976 Perkins, John H., 106 Gillett 06105
1944 Perkins, Joseph Augustine, 60 Gillett 06105
1975 Perlman, Sidney, 60 Gillett 06105
1933 Phelps, Maxwell Overlock, 85 Jefferson 06106
1959 Phinney, Arthur O., Jr., 85 Jefferson 06106
1949 Piacente, Salvatore Sylvester, 140 Woodland 06105
1959 Pinkes, Sam, 21 Woodland 06105
1968 Pisetsky, Myron Matthew, 200 Retreat Ave. 06106
1944 Pitegoff, Gerald Irving, 60 Gillett 06105
1948 Pizzo Paul S., 662 Wethersfield Ave. 06114
1967 Platt, Joan M., 85 Jefferson 06106
1950 Polivy, Charles, 60 Gillett 06105
1975 Powell, Charles Porter, Hartford Life Insurance Co., Hartford Plaza 06115
1958 Powers, Edward Donald, 576 Farmington Ave. 06105
1948 Prestley. William Francis, 100 Retreat Ave. 06106
1962 Prindle, Clair Gilbert, 1 Tower Sq. 06115
1949 Pulaski, John Edward, 40 Wethersfield Ave. 06114
1971 Purcell, James Joel, 31 Woodland 06105
1950 Pyrtek, Ludwig Joseph 85 Jefferson 06106

1967 Quinto, Eugene Louis, 111 Gillett 06105

1957 Radding, Philip, 60 Gillett 06105
1928 Radom, Myron Michael, 242 Trumbull 06103
1923 Rankin, Bertrand Fred, 116 Beacon 06105
1966 Raycroft, John Francis, 85 Jefferson 06106
1964 Reardon, George Emmett, St. Francis Hospital 06105
1950 Reed, John Francis, 85 Jefferson 06106
1954 Reinfrank, Ralph Frank, Hartford Hospital 06115
1975 Rhee, Sang-Seol, 140 Woodland 06105
1963 Ridlon, Herrick Clark, 85 Jefferson 06106
1974 Rinaldi, Michael Joseph, Hartford Hospital 06115
1973 Ritland, Gerald David, 140 Woodland 06105
1973 Roberts, Lloyd Eugene, 136 Retreat Ave. 06106
1969 Roberts, Melville Parker, 85 Jefferson 06106
1973 Robertson, Russell Wright, 85 Jefferson 06106
1950 Robinson, David, 21 Woodland 06105
1953 Robinson, John Christie, One Tower Sq. 06115
1973 Robinson, Paul D., Jr., 151 Farmington Ave. 06115
1943 Rocco, Mario P., 500 New Britain Ave. 06106
1948 Roh, Charles Ernest, 85 Jefferson 06106
1970 Rosenberg, Jack Eli, 400 Washington 06106
1966 Rosenberg, Mervin, 100 Constitution Plaza 06103
1963 Rosenthal, Irving Isaac, 21 Woodland 06105
1965 Rosenthal, Moe Bernard, 1680 Albany Ave. 06105
1975 Rosenworcel, Elliott, 60 Gillett 06105
1958 Ross, Wayne D., 85 Jefferson 06106
1965 Rossbaum, Robert Philip, 85 Jefferson 06106
1970 Rossi, Michael Andrew, 85 Jefferson 06106
1964 Rosson, Robert Stanley, 85 Jefferson 06106
1962 Rotatori, Eugene S., 111 Gillett 06105
1975 Rotenberg, Donald, 85 Jefferson 06106
1935 Roth, Frank Edward, 60 Gillett 06105
1963 Roth, Malcolm Shoor, 100 Constitution Plaza 06103
1957 Rouman, James Christ, 85 Jefferson 06106
1973 Roussis, Konstantinos, St. Francis Hospital 06105
1946 Rubin, Albert, 60 Gillett 06105
1975 Ruderman, Mark, 85 Jefferson 06106
1948 Russo, Joseph Nicholas, 85 Jefferson 06106
1975 Russolillo, Gary Edward, 10 Woodland 06105
1975 Ryan, Michael Joseph, Jr. 140 Woodland 06105
1953 Ryan, William Francis, Jr., 104 Gillett 06105

1951 Sachs, Julius Johnson, 60 Gillett 06105
1963 Sadowski, Joseph Stanley, 212 Ashley 06105
1973 Salerno, Nicholas Richard, Mt. Sinai Hospital 06112
1956 Saltzman, Seymour Harold, 60 Gillett 06105
1973 Satlof, David M., 50 Gillett 06105
1937 Sayers, John Joseph, 865 Park 06106
1963 Sayers, John Henry, 660 Prospect Ave. 06105
1947 Schnap, Isidore, 85 Jefferson 06106
1946 Schwartz, Herbert Norman, 60 Gillett 06105
1973 Schwartz, Louis, 50 Gillett 06105
1972 Schweizer, Robert Thomas, 85 Jefferson 06106
1940 Scoville, William Beecher, 85 Jefferson 06106
1952 Scull, Edward, 85 Jefferson 06106
1957 Seide, Morris J., 85 Jefferson 06106
1948 Seigle, Stewart Pinnell, 85 Jefferson 06106
1973 Selcow, Jay Elliot, 85 Jefferson 06106
1975 Seneviratne, U. E., Mt. Sinai Hospital 06112
1952 Sennett, Edward Joseph, 114 Woodland 06105
1942 Serbin, A. Frederick, 21 Woodland 06105
1960 Shafer, Myron Edward, 85 Jefferson 06106
1975 Shah, Suvesh M., 500 Blue Hills Ave. 06112
1976 Shapiro, Howard Robert, Mt. Sinai Hospital 06112
1975 Shapiro, Ruben L., 85 Jefferson 06106
1963 Shaw, Richard Clark, 140 Garden 06105
1975 Shea, William Patrick, III, 400 Washington 06106
1970 Sheehan, George Dunn, 1039 Asylum Ave. 06105
1947 Sherwood, Paul M., 400 Washington 06106
1951 Shoukimas, John, 21 Woodland 06105
1941 Shull, John Coulter, 99 Pratt 06103
1959 Sicklick, Elliot, St. Francis Hospital 06105
1974 Sigman, Robert Lewis, 85 Jefferson 06106
1954 Siker, Estelle, 23 Colebrook 06112
1975 Silk, Mark R., 140 Woodland 06105
1971 Silver, Herbert, 80 Seymour 06115
1973 Silverstein, H. Robert, 60 Gillett 06105
1976 Slavin, James Dennis, Jr., St. Francis Hospital 06105
1968 Slover, William Pyle, Jr., 85 Jefferson 06106
1965 Smith, Jay, R. V., 85 Jefferson 06106
1956 Smith, Leonard Kelley, 36 Woodland 06105
1944 Smith, W. Leslie, 100 Retreat Ave. 06106
1966 Soares, Manuel Joseph, 151 Farmington Ave. 06115
1943 Solomon, Rebecca Zincher, 85 Jefferson 06106
1963 Speer, Christopher S., 85 Jefferson 06106
1937 Spekter, Louis, 79 Elm 06115
1951 Spillane, Richard, 85 Jefferson 06106
1941 Sponzo, James Joseph, 3 Webster 06114
1975 Springer, Thomas Duane, 60 Gillett 06105
1952 Stack, William J., 566 Prospect Ave. 06105
1963 Stavola, John Joseph, 78 Retreat Ave. 06106
1946 Steege, Theodore Walter, 85 Jefferson 06106
1962 Stent, Philip Anthony, St. Francis Hospital 06105
1973 Stern, P. Gary, 21 Woodland 06105
1949 Steven, Ranald James, 85 Jefferson 06106
1975 Stevens, Thomas J., 60 Gillett 06105
1974 Stoughton, Peter Van Cortlandt, Hartford Hospital 06115
1971 Streeto, James Michael, 85 Jefferson 06106
1975 Sullivan, Paul R. C., 100 Retreat Ave. 06106
1974 Sunkin, David Frederick, 680 Blue Hills Ave. 06112
1957 Swain, Edward Bruce, 85 Jefferson 06106
1957 Sweet, Elliott Boyd, 85 Jefferson 06106
1948 Swett, Norris Poole, 1 Tower Sq. 06115

1974 Takata, Hiroyoshi, 85 Jefferson 06106
1970 Taylor, Peter Thurston, 85 Jefferson 06106
1939 Tennant, Robert, 80 Seymour 06115
1957 Thaw, Benjamin Dows, 1039 Asylum Ave. 06105
1949 Thayer, John Ernest, 114 Woodland 06105

1957 Thomas, John B., 85 Jefferson 06106
1938 Tonken, Louis Clarence, 487 Farmington Ave. 06105
1975 Tortora, Michael James, 283 Collins 06105
1953 Trench, James McKeehan, 85 Jefferson 06106
1957 Tripp, William Henry, 85 Jefferson 06106
1965 Trowbridge, Phillip E., 85 Jefferson 06106
1946 Tucker, Charles Albert, 100 Retreat Ave., 06106
1959 Tucker, Jolyon Simeon, 85 Jefferson 06106
1950 Tulin, George Arthur, 85 Jefferson 06106
1947 Turco, Vincent Joseph, 140 Woodland 06105
1937 Twaddle, Paul Holmes, 85 Jefferson 06106
1972 Tyrrell, David Perry, 85 Jefferson 06106
1933 Uricchio, Joseph George, 40 Wethersfield Ave. 06114
1963 Vance, Joseph Addison, III, Conn. Gen'l Life Ins. Co. 06115
1960 Veeder, Raymond, 200 Retreat Ave. 06106
1952 Vernlund, Robert James, 85 Jefferson 06106
1950 Waltman, Irving, 85 Jefferson 06106
1937 Walton, Loftus Linwood, 85 Jefferson 06106
1976 Wand, Martin, 100 Retreat Ave. 06106
1955 Ward, Kenneth Eaton, Conn. Gen'l Life Ins. Co. 06105
1950 Wardner, LeRoy Hamilton, 85 Jefferson 06106
1965 Warner, Allen, 85 Jefferson 06106
1932 Warring, Howard Lewis, 12 Sanford 06120
1964 Waterman, William Bullock, 151 Farmington 06105
1966 Watson, H. Kirk, 85 Jefferson 06106
1946 Wawro, N. Williams, 85 Jefferson 06106
1943 Weiner, Sylvia, 99 Pratt 06103
1936 Weissenborn, Walter, 196 Terry Rd. 06105
1955 Welhaven, Arne, 136 Retreat Ave. 06106
1963 Westcott, Jack Lawrence, 85 Jefferson 06106
1948 Wells, Gideon Robbins, 21 Woodland 06105
1976 Wells, Kenneth Hubert, 85 Jefferson 06106
1954 Wetstone, Howard Jerome, Hartford Hospital 06115
1974 Wheeler, Maynard Boynton, 100 Retreat Ave. 06106
1938 Whitcomb, Benjamin Bradford, 85 Jefferson 06106
1938 White, Benjamin Vroom, 85 Jefferson 06106
1960 White, Kenneth Howard, Jr. 60 Gillett 06105
1958 Whitehead, David Earle, Hartford Hospital 06115
1965 Wieche, Donald Richter, 85 Jefferson 06106
1951 Wiese, Chester Albert, Hartford Hospital 06115
1948 Wiesel, Benjamin, 85 Jefferson 06106
1962 Wilcox, David Sanborn, 100 Retreat Ave. 06106
1958 Williams, Henry M., 85 Jefferson 06106
1930 Wilson, William Augustus, 841 Asylum Ave. 06105
1969 Winalski, H. Paul, 114 Woodland 06105
1959 Wolf, Arthur Dale, 85 Jefferson 06106
1959 Wolfson, S. Steven, 21 Woodland 06105
1933 Wood, Frank Oliver, 85 Jefferson 06106
1975 Woods, William Allen F., St. Francis Hospital 06105
1962 Woodhouse, Robert William, 85 Jefferson 06106
1949 Woodruff, John Harrison, 85 Jefferson 06106
1947 Zarkin, Oscar Howard, 44 Whitney 06105
1959 Zeller, William Webb, 200 Retreat Ave. 06106
1970 Zelman, Marvin, 85 Jefferson 06106
1973 Zeman, Peter Michael, 200 Retreat Ave. 06106
1948 Zimmerman, Leon Ward, 100 Retreat 06106
1970 Ziter, Fred M. H., Jr., 85 Jefferson 06106
1961 Zmijeski, Charles, Jr., 60 Gillett 06105

KENSINGTON 06037

1948 Chotkowski, Ludmil Adam, 1143 Chamberlain Hwy.
1967 Leicach, Jorge, 19 Clover Hill Pl.
1965 Lopez, Raul E., 320 New Britain Rd.
1938 LoVetere, Angelo Arthur, 140 Homecrest Dr.
1930 Matteis, Joseph Theodore, 142 Mooreland Rd.
1938 Perakos, George Peter, 9 High Rd.
1940 Rosahn, Paul Dolin, 206 Ellwood Rd.
1961 Sultar, Robert Stephan, 320 New Britain Rd.
1974 Toffolon, Edward Peter, 9 High Rd. 06037

MANCHESTER

1953 Baldwin, W. Howard, 341 Broad 06044
1937 Barry, Joseph Charles, 156 Main 06040
1971 Benavides, Carlos Gonzalo, 320 Main
1946 Besser, Edward Lambert, 17 Haynes 06040
1961 Braat, John Petrus, 265 Ludlow Rd. 06401
1960 Breer, Robert Dunwoody, 17 Haynes 06040
1973 Burns, Daniel W., 191 Main 06040
1952 Butterfield, Robert Kenneth, R.F.D. No. 2, Box 72
1957 Caldwell, David Manchester, Jr., 26 Haynes 06040
1966 Campbell, Iain Gordon, 153 Main 06040
1963 Charendoff, Leo, 320 Main 06040
1957 Demko, Richard Michael, 29 Haynes 06040
1940 Diskan, Albert Elmer, 29 Haynes 06040
1963 Duke, Martin, 26 Haynes 06040
1958 Eddy, John Randall, 124 Timrod Rd. 06040
1974 Essack, Jousub Yusuf, 150 N. Main 06040
1971 Ferrari, Dudley Alfred, 36 Haynes 06040
1966 Fialkoff, Ruben, Manchester Memorial Hospital 06040
1965 Flanagan, Edward P., 20 Jean Rd. 06040
1926 Friend, Amos Edgar, 36 Haynes 06040
1972 Ghabrial, Sobhy L., 342 Main 06040
1973 Golkar-Sisani, Firooz, Manchester Hospital 06040
1958 Gram, Peter Basil, 36 Haynes 06040
1974 Grossman, Donald Steve, 341 Broad 06040
1963 Guardino, Joseph John, 1049 Main 06040
1954 Guinan, Don Allen, 153 Main 06043
1955 Hamilton, Charles Raymond, Jr., 153 Main 06043
1952 Healy, Thomas McLean, 257 East Center 06040
1965 Heimann, Walter Gad, 29 Haynes 06040
1949 Helfrick, Francis Woodrow, 257 East Center 06040
1970 Hendessi, Hossain, 320 Main 06040
1951 Herman, Ralph Scallon, Jr., 9 Sanford Rd. 06041
1950 Horton, Frank Hamilton, 17 Haynes 06040
1957 Horwitz, Melvin, 29 Haynes 06040
1944 Jacobson, Charles Edward, Jr., 172 East Center 06040
1972 Kahaner, Harvey Allen, 320 Main 06040
1957 Karns, Robert Earl, 29 Haynes 06040
1936 Keeney, Robert Raymond, Jr., 29 Haynes 06040
1969 Kim, Cyril K., 342 Main 06040
1971 Klipstein, Arnold Lloyd, 153 Main 06043
1972 Klipstein, Eve Adele, 153 Main 06040
1968 Krupp, Alan Fred, 26 Haynes 06040
1971 Kurien, V. Abraham, 29 Haynes 06040
1975 Kuru, Ranjit Layanande, 342 Main 06040
1950 Lehmus, Harold J., 56 Haynes 06040
1948 Lockward, Howard Jefferson, 44 Haynes 06040
1921 Lundberg, George Albin Ferdinand, 223 East Center 06040
1957 Lundberg, George Albin Ferdinand, Jr., 153 Main 06043
1953 Malone, Harold John, 153 Main 06040
1952 Marzialo, Nicholas A., 15 Middle Tpke., West 06044
1969 Meisner, Burton M., 320 Main 06040
1964 Milewski, Stanislaw Antoni, 191 Main 06040
1946 Miller, Gerard Roland, 17 Haynes 06040
1950 Morrison, Donald William, 17 Haynes 06040
1951 Moyer, Winfield Tyson, Jr., 36 Haynes 06040
1969 Nix, Harold Robert, 191 Main 06040
1963 Norman, Paul Stuart, 320 Main 06040

1974 Nosce, Luis Valdehuesa, 150 North Main 06040
1976 Passaretti, Michael, 36 Haynes 06040
1957 Pastel, Harvey, 257 East Center 06040
1952 Platz, Joseph, 6 Bates Rd. 06040
1945 Prignano, John Vincent, 28 Bishop Dr. 06040
1975 Purcell, Daniel Paul, 150 North Main 06040
1957 Roberts, Douglas James, Jr., 29 Haynes 06040
1975 Rodner, Robert D., 320 Main 06040
1971 Romeo, Stephen Gerard, 191 Main 06040
1947 Rosen, Theodore, 808 Main 06040
1965 Rubin, Martin Lewis, 29 Haynes 06040
1951 Rubinow, Merrill Benjamin, 320 Main 06040
1976 Saini, Om P., 257 East Center 06040
1951 Schardt, Walter Mallory, 191 Main 06040
1973 Shakibai, Ali, 153 Main 06040
1960 Smith, Douglas Humbert, 153 Main 06043
1971 Smith, Samuel Goodale, 191 Main 06043
1956 Snyder, Herbert Leon, 29 Haynes 06040
1975 Sobin, Bruce A., 341 Broad 06040
1974 Song, Soonhi, 320 Main 06040
1957 Stanton, Robert Eugene, 153 Main 06043
1961 Sulick, Edward Joseph, 315 East Center 06040
1959 Summer, Philip Edward, 191 Main 06040
1937 Sundquist, Alfred Bernhardt, 17 Haynes 06040
1971 Tehrani, Hossein Limoui, 320 Main 06040
1950 Thomas, Andrew Henry, 36 Haynes 06040
1974 Turek, Alice Jaros, Health Director c/o Town Hall 06040
1953 Walden, Robert Clarence, Jr., 17 Haynes 06040
1968 Wheeler, John Paul, 191 Main 06040
1970 Wickersham, C. Wendell, III, 44 Haynes 06040
1975 Zariphes, Constantine, 99 East Center 06040

MARLBOROUGH 06424

1965 Schreuder, Otis Blaine, South Rd.

NEW BRITAIN

1957 Ahrens, Lawrence Bernard, 300 Main 06051
1975 Balakrishna, Hanumanthaiah, New Britain General Hospital 06050
1952 Bayer, Alexander Eli, 233 Main 06051
1972 Bee, Rudolf W., 800 Corbin Ave. 06051
1957 Belkin, Joseph William, 40 Hart 06052
1948 Bellach, Harry, 300 Main 06051
1974 Belman, David Arthur John, 40 Hart 06052
1957 Bernstein, Abraham, 33 Lexington 06052
1959 Bernstein, Chester Murray, 233 Main 06051
1934 Bernstein, Dwight J., New Britain General Hospital 06050
1963 Blank, Gerald Issar, 601 Farmington Ave. 06053
1974 Blau, Jeffrey S., 40 Hart 06052
1930 Blogoslawski, Walter Joseph, 199 West Main 06052
1958 Bower, Russell Stanley, 73 Cedar 06052
1957 Bray, George Henry, 73 Cedar 06052
1927 Buol, Robert Stanley, 91 Ten Acre Rd. 06052
1961 Byer, Seymour, 40 Hart 06052
1947 Carlson, Carl Edwin, 73 Cedar 06052
1975 Cavo, John William Jr., 30 Bank 06051
1964 Clapp, Paul, Grove Hill Clinic 06050
1946 Clark, Bliss Bartlett, 92 Grand 06052
1945 Clarke, Harold Metcalf, 40 Hart 06052
1969 Cosentino, Robert Thomas, 300 Kensington Ave. 06051
1952 Crothers, Charles Henry, 300 Kensington Ave. 06051
1965 Crowley, Joseph William, 233 Main 06051
1963 Dalburg, Lewis Arthur, Jr., 300 Kensington Ave. 06051
1931 Darrow, John Edward, 55 West Main 06051
1962 Dinep, Martin, 100 Grand 06052
1970 Doctoroff, Stephen John, 300 Kensington Ave. 06051
1960 Dorfman, George, 40 Hart 06052
1941 Dorian, Edward, 48 Roslyn Dr. 06052
1973 Dragon, Robert Edward, 73 Cedar 06052
1969 Dressler, David M., New Britain Gen. Hosp. 06050
1947 Dunn, Morris L., 300 Main 06051
1942 Eisenberg, Sidney Edwin, 33 Lexington 06052
1970 Enriquez, Alfonso Raymundo, 300 Kensington Ave. 06051
1963 Fenaughty, Richard W., 300 Kensington Ave. 06051
1969 Filewicz, Stanley Peter, 55 West Main 06051
1971 Folk, Joseph John, Grove Hill Clinic 06050
1960 Formica, Joseph J., 73 Cedar 06052
1968 Gaintner, J. R., New Britain Gen. Hosp. 06050
1974 Geoghegan, John William, 100 Grand 06050
1974 Giertz, William Edward, New Britain Gen. Hosp. 06050
1974 Gladstone, Todd M., 73 Cedar 06052
1943 Greenblatt, Harold Joseph, 73 Cedar 06052
1974 Gryboski, Robert Andre, 30 Bank 06050
1964 Gryboski, William A., 73 Cedar 06052
1966 Harwin, S. Martin, 300 Kensington Ave. 06051
1962 Hawkes, Peter Harold Robert, 19 Bassett 06051
1951 Herr, Herbert Harvey, 300 Kensington Ave. 06051
1967 Hicks, Robert Edward, 70 West Main 06051
1965 Horrax, Trudeau M., 300 Kensington Ave. 06051
1974 Howard, Rufus Oliver, 300 Kensington Ave. 06052
1970 Jacobson, James J., 40 Hart 06052
1958 Jarboe, Edward J., 300 Kensington Ave. 06051
1957 Johnson, Samuel Ault, 300 Kensington Ave. 06051
1966 Johnson, Theodore Herbert, 300 Kensington Ave. 06051
1951 Kaplan, Henry Morris, 73 Cedar 06052
1960 Kawecki, Witold, 165 West Main 06051
1975 Keller, David Jay, 300 Kensington Ave. 06050
1972 Khan, Khurshid, 73 Cedar 06052
1970 Koch, Lawrence W., 40 Hart 06052
1972 Koops, Herbert J., 30 Bank 06051
1942 Lacava, John James, 73 Cedar 06052
1973 Lakin, Paul .C, New Britain General Hospital 06050
1946 Larkin, John Charles, New Britain General Hospital 06050
1946 Levine, Howard, New Britain General Hospital 06050
1948 Livingston, William T., Grove Hill Clinic 06050
1968 Lund, David Allan, New Britain General Hospital 06050
1955 Madden, Thomas James, 100 Grand 06052
1957 Mandell, Julian, 40 Hart 06052
1952 Marsh, Alexander, Central Conn. St. Coll. 06051
1948 Martin, Edward, Grove Hill Clinic 06050
1946 Mlynarski, Joseph Andrew, 73 Cedar 06052
1975 Moody, Peter Campbell, New Britain General Hospital 06050
1969 Moss, Robert, 73 Cedar 06050
1970 Nelson, Rodger Keith, 300 Kensington Ave. 06051
1940 Nevulis, Anthony V., 32 Grove Hill 06052
1974 Noniewicz, Stanley John, 40 Edbert Dr. 06052
1968 Nourizadeh, Ali-Reza, 73 Cedar 06052
1956 Ohanesian, Jacob Harry, 40 Hart 06052
1938 Orbach, Egmont Julius, 81 West Main 06051
1973 O'Reilly, Hugh Edward, 73 Cedar 06052
1968 Owens, Guy, 40 Hart 06052
1938 Parlato, Harry Anthony, 55 West Main 06051
1944 Peck, Bernard Carl, 32 Park Pl. 06052
1963 Pito, Vincent J., New Britain General Hospital 06050

1939 Pola, William Edward, 41 Lexington 06052
1957 Rackliffe, Robert Lockwood, 670 Arch 06051
1936 Resnik, Edward, 272 Main 06051
1962 Ringrose, Vincent Patrick, Jr., 73 Cedar 06052
1975 Roberts, Richard William, 300 Kensington Ave. 06051
1964 Root, Howard Frank, Jr., New Britain General Hospital 06050
1970 Samson, Donald Walter, 300 Kensington Ave. 06051
1930 Schechtman, Charles Theodore, 73 Cedar 06052
1954 Scheer, Edward Harold, 40 Hart 06052
1973 Scholand, Joseph Francis, 300 Kensington Ave. 06051
1931 Schupack, Samuel David, 38 Mason Dr. 06052
1938 Scully, Roger Tehan, 469 Lincoln 06052
1964 Sharon, Henry Joseph, 40 Hart 06052
1962 Sirkin, Robert Benjamin, 300 Kensington Ave. 06051
1975 Sittambalam, Earle J., 300 Kensington Ave. 06050
1955 Slater, Gregory S., 40 Hart 06052
1930 Slysz, Ladislaus Bernard, 247 West Main 06051
1970 Solano, Humberto, 300 Main 06051
1936 Squillacote, Vincent Joseph, 30 Lyle Rd. 06053
1974 Steckler, Jeffrey Brandeis, 233 Main 06051
1961 Stewart, William Errol Louis, 109 Vine 06050
1975 Stier, Steven, 100 Grand 06050
1938 Sullivan, Charles Noyes, 55 West Main 06051
1973 Swartz, George J., 300 Kensington Ave. 06051
1956 Taylor, Daniel Morse, 300 Kensington Ave. 06051
1971 Taylor, William R., 219 West Main 06052
1962 Thomas, Richard John, 40 Hart 06052
1976 Toor, Nasim F., 29 Park Pl. 06052
1941 Trapp, Francis W., 55 West Main 06051
1975 Ulreich, Sidney, New Britain Gen. Hosp. 06050
1967 Visnauskas, John William, 83 Vine 06052
1962 Waskowitz, William Jay, 40 Hart 06052
1965 Waugh, Robert Edmund, New Britain General Hospital 06050
1957 Wehrli, Adolph, 300 Kensington Ave. 06051
1973 Welna, Joseph A., 73 Cedar 06052
1948 Wesoly, Andrew Stanley, 27 Grove Hill 06052
1932 White, John Cowles, 300 Kensington Ave. 06051
1964 Wilson, James Miller, 300 Kensington Ave. 06051
1954 Winship, Granville Montgomery, Grove Hill Clinic 06050
1948 Wolfson, Samuel, 15 Coolidge 06052
1950 Wright, Ralph C., 300 Kensington Ave. 06051
1948 Yannello, Mario Humbert, 520 Shuttle Meadow Ave. 06052
1966 Zaccheo, Thomas Joseph, 300 Kensington Ave. 06051
1965 Zembko, Andrew Francis, 73 Cedar 06052

NEWINGTON 06111

1952 Callahan, James Lawrence, 24 Walsh Ave.
1975 Cerciello, Robert Louis, 181 East Cedar 06111
1950 Cohen, Benjamin, Newington Children's Hospital
1938 Curtis, Burr H., 181 East Cedar
1974 Drennan James Cyril, 181 E. Cedar
1975 Fazzari, Patrick Joseph, 181 E. Cedar
1935 Fenney, Philip William, Veterans Administration Hospital
1949 Flynn, Frederick, Newington Children's Hospital
1946 Friedberg, Isadore Hirsh, 93 Market Sq.
1957 Gold, Howard Carl, 24 Walsh Ave.
1975 O'Neil, Vincent Danforth, 72 Southwood Rd.
1971 Ozonoff, Maer B., Newington Children's Hospital
1952 Pierce, John Archer, 181 East Cedar
1972 Scheig, Robert Lee, Veterans Administration Hosp.
1957 Wolfson, Herman, 142 Market Sq.

PLAINVILLE 06062

1975 Collins, Conrad Douglas, 100 East Main
1943 Iannotti, John Pasquale, 78 Whiting
1976 Ill, Katherine Cooke, 29 Park
1964 Saltzman, Marvin 29 Park
1962 Yannios, James Nicholas, 73 East Main
1956 Zebrowski, Edward Julian, 120 West Main

PLANTSVILLE 06479

1937 Connor, George Michael, 964 South Main

ROCKY HILL 06067

1973 Agarwal, Chandra Kumar, Veterans Hospital
1954 Benkovich, Geza O., C419 Century Hills, 300 Cold Spring Rd.
1973 Ranganathan, Vasudeva, Veterans Hospital
1946 Walker, Donald Albert, 2051 Silas Deane Hwy.

SIMSBURY 06070

1974 Buonomano, Ronald John, 930 Hopmeadow
1965 Hampton, Walter Richard, 930 Hopmeadow
1974 Himmelsbach, Richard Karl, 132 Firetown Rd.
1973 Imran, Ali Hashmi, 11 Banks Rd.
1973 Johnston, Janice J., 720 Hopmeadow
1966 Keating, Stanley John, 34 Beldenwood Rd.
1965 Lewis, Garner Lennon, 720 Hopmeadow
1925 Murphy, Owen Lee, Canal
1964 Scudder, Walter Tracy, 720 Hopmeadow
1968 Sherman, Stephen Huntington, 13 Hopmeadow

SOUTHINGTON 06489

1958 Alfonsi, Ambrose A., 70 Berlin Ave.
1955 Arcano, Joseph Timothy, 201 Main
1973 Blumer, Arthur T., 98 Main
1964 Browne, Harry Herbert, 25 Berlin Ave.
1949 D'Angelo, Anthony James, 94 Center
1949 D'Angelo, Eugene Joseph, 94 Center
1976 Dhumale, Suresh Hanmantrao, Bradley Memorial Hospital
1935 Dudac, Thomas William, 98 Main
1933 Gura, George Michael, 76 Main
1973 Heap, Lewis Derek, Bradley Memorial Hospital
1975 Kaplan, Joseph Ross, Bradley Memorial Hospital
1974 Mertz, James Joseph, Bradley Memorial Hospital
1973 Somogyi, Balazs Bela, 98 Main
1947 Stetson, Harold Prescott, 101 North Main
1929 Thalberg, Reuben Edward, 80 Oakland Rd.

SOUTH WINDSOR 06074

1968 Gutkowski, Thaddeus John, 1700 Ellington Rd., P.O. Drawer B
1933 Houle, Raymond Theodore, 564 Main
1958 McGann, Desmond Martin, 658 Ellington Rd., P. O. Box 584

SUFFIELD 06078

1938 Coates, S. Paul, 370 North Main
1959 Zaczynski, Edward Joseph, 150 Hill

THOMPSONVILLE 06082

1937 Bloom, David Irving, 128 Pearl
1957 Czaja, Ronald Joseph, Hazard Ave.

1937 Dignam, Bernard Stephen, 133 Pearl
1966 Gfeller, Robert John, Enfield Professional Center
1938 Gourlie, Howard Wallace, 5 Riverview
1950 Johnson, Carl Wentworth, 11 North Main
1975 McGuane, Richard M., 82 South Rd.
1948 Robbins, Jacques, 5 North Main
1960 Schear, William Augustine, Hazard Ave.

UNIONVILLE 06085

1955 Austin, G. Lawrence, Jr., 23 Sycamore La.
1972 Woolfson, Arthur Ervin, 36 Main

WEST HARTFORD

1944 Allen, Mary Mazner, 1007 Farmington Ave. 06107
1949 Allen, Roy, 15 North Main 06107
1955 Altenberg, Henry Edward, 2668 Albany Ave. 06117
1973 Amato, Joseph Alfred, 720 Farmington Ave. 06119
1966 Anderson, Albin Stephen, 17 Drury Lane 06117
1975 Balazs, Denes Vilmos, 1043 Farmington Ave. 06107
1947 Barbour, Charles Manson, Jr., Wyngate Lane 06107
1940 Barker, Norman John, 5 Forest Hills La. 06117
1973 Berkley, Richard Bruce, 8 Lowell Rd. 06119
1972 Blakeslee, Sister Mary Helene, 27 Park Rd. 06105
1947 Bowen, Francis Dorsey T., 45 Sedgwick Rd. 06107
1967 Brewer, Sybille von Lindeiner, 109 Pioneer Dr. 06117
1972 Brodey, James Franklin, 854 Farmington Ave. 06119
1929 Buck, Burdette Jay, 215 Tunxis Rd. 06107
1954 Buckman, Frank Gilbert, Box 386, 06107
1974 Callan, Walter Michael, 854 Farmington Ave. 06119
1929 Carroll, James Edward, 250 Griswold Dr. 06119
1933 Cenci, Vincent Peter, 854 Farmington Ave. 06119
1922 Clason, Freeman Pell, 40 West Hill Dr. 06119
1960 Conroy, John Thomas, 46 Sunrise Hill Dr. 06107
1953 Conway, Mark, 125 LaSalle Rd. 06107
1967 Cullen, Mary Teresa, 27 Fernwood Rd. 06119
1928 Cushman, Laurence Arnold, 19 Brunswick Ave. 06107
1940 D'Ambruoso, Dominic Charles, 30 Glen Hollow 06117
1962 David, Nasser David, 290 Park Rd. 06119
1914 Deming, Clinton Demas, 173 Steele Rd. 06119
1938 Donovan, William Francis, 798 Farmington Ave. 06119
1937 Downer, Muriel Case, 17 Stratford Rd. 06117
1942 Duksa, Walter Joseph, 113 Bainbridge Rd. 06119
1938 Durkee, Ralph Everett, Jr., 85 Brookside Dr. 06107
1953 Earle, Lyon Hooper, Jr., 16 Sunset Ter. 06107
1960 Ehrlich, Eugene L., 45 South Main 06107
1927 Elliot, K. Gregory, 27 Brookline Dr. 06107
1943 Ellis, Lyle Gaffney, 1260 Farmington Ave. 06107
1952 Emmel, Robert Cortland, 61 South Main 06107
1941 Feeney, Thomas Michael, 4 Sunset Ter. 06107
1958 Felber, John Hans, 61 South Main 06107
1932 Filson, Ralph Marshall, 1028 Farmington Ave. 06107
1913 Flaherty, Claude Vincent, 2308 Albany Ave. 06117
1965 Fons, Anthony Ludwig, III, 345 North Main 06117
1968 Foster, Kendall Wilson, Jr., 41 Westminster Dr. 06107
1975 Fote, John Joseph, 820 Farmington Ave. 06119
1925 Fox, James Charles, Jr., 26 Westmoreland Dr. 06117
1952 Frank, Ludwig Mathias, 801 Farmington Ave. 06119
1957 Friel, Patrick Brendan, 801 Farmington Ave. 06119
1972 Gabrielle, Fred Michael, 820 Farmington Ave 06119
1972 Gerber, William Hermann, 61 South Main 06107
1953 Gerent, Walter Paul, 115 Meadow Lane 06107
1975 Gionfriddo, Joseph Robert, 845 Mountain Rd. 06117
1960 Goldenberg, Arnold, 1260 New Britain Ave. 06110
1950 Gordon, Yale, 10 Princeton 06110
1958 Graffagnino, Paul N., 66 Uplands Dr. 06107
1949 Haines, Robert William, 14 Brace Rd. 06107
1939 Hall, Wendell Charles, 84 Brace Rd. 06107
1953 Hamilton, George Livingstone, Jr., 43 Sulgrave Rd. 06107
1967 Harris, Robert Lester, 758 Farmington Ave. 06119
1946 Hepburn, Robert Houghton, 91 Pioneer Dr. 06117
1958 Hill, John M., 61 South Main 06107
1973 Hoffman, Lee Ira, 758 Farmington Ave. 06119
1975 Hollinshead, Joseph Bentley, 45 S. Main 06107
1930 Holtz, Raymond Sidney, 16 Mt. Farms Rd. 06117
1965 Hosking, Wayne Frederick, 31 Rillbank Ter. 06107
1954 Houlihan, John Joseph, 125 LaSalle Rd. 06107
1963 Howe, George O., 696 Mountain Rd. 06117
1941 January, Derick Algernon, 94 Walbridge Rd. 06119
1942 January, Mildred Hartshorn, 94 Walbridge Rd. 06119
1935 Kaschmann, Joseph, 1118 Trout Brook Dr. 06119
1966 Kenny, William Joseph, 108 Steele Rd. 06119
1946 Kirsch, Neville, 61 South Main 06107
1969 Kurland, Morton David, 125 LaSalle Rd. 06107
1953 Leeds, William Gerard, 818 Farmington Ave. 06119
1942 Lenehan, J. Richard, 10 Dale 06107
1964 Livingston, Robert, 1329 Boulevard 06119
1956 MacKinnon, Ian, 61 South Main 06107
1955 Maloney, Richard Harrington, 801 Farmington Ave. 06119
1953 Marsh, Raymond Randolph, 10 Arapahoe Rd. 06107
1959 Marshall, Lois Foster, 53 Westmont 06117
1935 Martin, John Garthwaite, 1064 Farmington Ave. 06107
1974 Menzer, Alexander, 779 Farmington Ave. 06119
1961 Milyko, Alexander Busch, 61 South Main 06107
1969 Morhardt, Charles Edwin, 45 South Main 06107
1969 Moskowitz, Harold, 14 Arlen Way 06117
1935 Murphy, Thomas Francis, 850 Farmington Ave. 06119
1973 Nathanson, Robert Bennett, 61 So. Main 06107
1928 O'Connell, Maurice Francis, 17 Westwood Rd. 06117
1975 Perlman, Adele Maiman, 19 Timrod Rd. 06107
1934 Preston, Thomas R., 119 Bainbridge Rd. 06119
1951 Rankin, Clair, 1329 Boulevard 06119
1963 Rentz, Robert Edward, 1102 Farmington Ave. 06107
1960 Rogers, Henry Crampton, 81 South Main 06107
1924 Root, Maurice Timothy, 51 North Main 06107
1935 Root, Sophie Andrews, 51 North Main 06107
1972 Rosenkranz, Barry Martin, 639 Prospect Ave. 06105
1956 Rothstein, Isadore, 90 Haynes Rd. 06117
1975 Rudnick, Robert David, 126D New Britain Ave. 06110
1921 Russell, G. Gardiner, 118 Steele Rd. 06119
1947 Schatten, Siegfried Sylvester, 1157 New Britain Ave. 06110
1975 Schipke, Raymond E., 785 Farmington Ave. 06119
1971 Schuster, Harvey Stuart, 41 North Main 06107
1966 Scully, Harold Francis, 29 Winterset Lane 06117
1975 Sereny, Peter, 1043 Farmington Ave. 06107
1964 Shelton, Philip Arthur, 41 North Main 06107
1964 Smith, Jay Donald, 10 Princeton 06110
1952 Smith, Lillian A., 44 Hartwell Rd. 06117
1939 Smith, Wilson Fitch, 25 Bainbridge Rd. 06119
1975 Son, Yung Sook, 16 Cumberland Rd. 06119
1927 Standish, E. Myles, 11 Greenridge Lane 06107
1935 Standish, Hilda Crosby, Greenridge Lane, Sunset Farm 06107
1962 Tadeo-Goldman, Josephine A., 38 Visgrove Lane 06117
1948 Teahan, John William, 7 Hillsboro Dr. 06107
1961 Van Der Werff, Jacob Anne, 801 Farmington Ave. 06119

1923 Van Kleeck, Euen, 53 Concord 06119
1940 Walker, Robert, 10 Flagstad Rd. 06107
1973 Wasserman, Herbert E., 1005B Farmington Ave. 06107
1957 Welch, Edmund Thomas, Jr., 5 Manor Lane 06107
1920 Weld, Stanley B., 15 Gloucester Lane 06107
1973 Wells, Jean, 1005 Farmington Ave. Plaza 06107
1946 White, Edward Philip, 41 Riggs Ave. 06107
1941 Wineck, Morris Samuel, 11 Eastwood Rd. 06117
1934 Winters, John Thomas, 10 Dale 06107
1922 Wright, William Witter, 200 Fern 06119
1948 Zeldis, Norman, 21 Tanglewood Rd. 06117

WEST SIMSBURY 06092

1974 Dimlich, H. Karl, 41 Madison La.
1951 Hockmuth, Lloyd Norton, 204 W. Ledge Rd.
1930 Reynolds, Robert Gardner, 180 West Ledge Rd.

WETHERSFIELD 06109

1956 Agee, Fred Benson, Jr., 51 Westway
1974 Braren, Carl Henry, 463 Wolcott Hill Rd.
1968 Callan, John P., 425 Coppermill Rd.
1938 Carvey, Edward Vincent, 1 Garden
1948 Cavalieri, Rinaldo Joseph, 454 Highland
1937 Fagan, Francis Xavier, 147 Wells Farm Dr.
1960 Foote, Franklin M., 4 Round Hill Rd.
1936 Gallivan, John Norman, 951 Ridge Rd.
1954 Giosa, Nicholas, 463 Brimfield Rd.
1952 Golden, Archie James, 91 Hillcrest Ave.
1946 Hellijas, Carl Sylvester, 4 River Rd.
1953 Johnston, J. Howard, 522 Wolcott Hill Rd.
1934 Keefe, Raymond Starkey, 304 Church
1958 Kessel, Leizor, 183 Spring
1949 Murphy, Robert Daniel, 5 Cottwell Dr.
1973 O'Connell, Paul Benedict, 239 Silas Deane Highway
1961 Pace, Silvio Fernando, 63 Wells Rd.
1960 Pierce, John Arthur, 11 Golf Rd.
1964 Powell, Nancy Rolick, 473 Wolcott Hill Rd.
1960 Ryan, William Donovan, 229 Maple
1923 St. John, Leopold Albert, 415 Silas Deane Highway
1950 St. John, Nicholas E., 375 Ridge Rd.
1932 Storms, William Frederick, 25 Old Smithy La.
1962 Turner, Wallace Wilder, 102 Clovercrest Rd

WINDSOR 06095

1958 Britting, John Anthony, 697 Poquonock Ave.
1975 Chowdhury, Muzibul Gani, 150 Poquonock Ave.
1949 Donohue, Stephen Michael, 525 Windsor Ave.
1967 Ford, James Raymond, 697 Poquonock Ave.
1959 Granville, Norma Belle, 126 Clover
1956 Hamblin, Wolcott Chaffee, 342 Park Ave.
1957 Keefe, Raymond Bernard, 697 Poquonock Ave.
1930 MacCready, William Harold, 3 Orchard Lane
1955 Mack, Daniel Elliott, 74 Mack
1957 Murphy, Edward Francis, 1000 Prospect Hill Rd.
1975 Paslawski, Walter, 93 Long Hill Rd.
1975 Pattillo, James Gilchrist, 74 Mack
1947 Poirier, Theophane M., 26 Maple
1958 Pullen, Richard Donald, 74 Mack
1950 Silliman, Warren B., 26 Prospect
1964 Tummillo, Mary Anne, 924 Windsor Ave.
1975 Velie, William Milner, 74 Mack

WINDSOR LOCKS 06096

1930 Byrne, David W., 412 Elm
1952 Eilbergas, Michael, 403 Halfway House Rd.
1948 Kennedy, John Joseph, Jr., 46 Center
1964 Wehr, Robert, 326 South Center

OUT OF COUNTY

1952 Abbot, Frank Kimball, 341 Laurel Grove Rd., Middletown 06457
1957 Bachman, John Presly, Apt. 403R, Chateau LaJolla, LaJolla, California 92037
1955 Barry, Robert Torney, Craigville Beach Rd., West Hyannisport, Mass. 02672
1946 Baskin, Abraham Hyman, U-11, Univ of Conn., Storrs 06268
1933 Bausch, Carl Philipp, 76 Cliff Rd., Nantucket, Mass. 02554
1932 Benoit, Raoul Joseph, 209 Rosary Rd., Clearwater, Florida 33516
1951 Brandriss, Joseph, 4720 Pinetree Dr., Miami Beach, Florida 33140
1939 Brewer, Francis, 711 Avila Pl., El Cerrito, California 94530
1962 Brewer, Timothy Francis, III, 5 Boulder Rd., Otter Cove, Old Saybrook 06475
1973 Bundy, Edward Stillman, Meriden Hospital, Meriden 06450
1958 Burke, Gerald Francis, Box 154, Northfield 06778
1965 Bush, Hubert Sutton, Jr., 57 Union, Rockville 06066
1951 Canzonetti, Andrew Joseph, Scovill Mfg. Co., Waterbury 06706
1947 Carey, Thomas B., 221 N.E. 15th, Delray Beach, Florida 33444
1964 Carr, Michael Francis, 25 Chestnut Ct., Cromwell 06410
1961 Casey, Edward James, 1641 Colden Ave., Bronx, New York 10462
1965 Colliton, Robert John, 34 Oakmoor Dr., Vernon 06066
1933 Corcoran, Michael A., Ridgeview Rest Home, Cromwell 06416
1943 Crispin, Maximilian A., 1411 N. Flagler Dr., West Palm Beach, Florida 33401
1946 Desmond, Charles T., Parkside Apts., 10649 Montrose Ave., Bethesda, Maryland 20614
1969 Dunne, Michael Joseph, 9013 Beatty Dr., Alexandria, Virginia 22308
1947 Ebers, Theodore Martin, P. O. Box 821, Sedona, Arizona 86336
1942 Edson, Reginald Campbell, 963 Catalina Rd., St. Augustine Shores, Florida 32084
1933 Farland, Victor Louis, 3000 N. E. 56th Ct., Fort Lauderdale, Florida 33308
1969 Finkelstein, Harvey Ira, Yale-New Haven Hospital, New Haven 06504
1975 Graham. John R., 687 Main, Branford 06405
1975 Greenberg, Robert David, Vernor Prof. Building, Rt. 30, Vernon 06066
1967 Gutierrez, Teofilo Gregorio, Jr., Meriden Hospital Meriden 06450
1934 Horning, Benjamin Graham, Hostal Alameda, Calle Casas de Compos, 3 Malaga, Spain
1935 Hough, Perry Tyler, Parrsboro, Nova Scotia, Canada
1948 Jennings, Walter Forfar, 122 E. Shore Ave., Groton Long Point 06340
1930 Kalett, Joseph, 2055 Gulf of Mexico Dr., Apt. 209, Sarasota, Florida 33577
1937 Katz, Dewey, 3379-P Punta Alta, Laguna Hills, California 92653
1928 Laplume, Albert Antonio, 2806 N.W. 52nd Ct., Tamarac, Ft. Lauderdale, Florida 33309
1971 Lawson, Ian Richard, Danbury Hospital, Danbury 06810
1950 Lear, Harold A., 1170 5th Ave., New York, New York 10029

1936 Lewis, Samuel Donald, 1801 S. Flagler Dr., West Palm Beach, Florida 33401
1965 Mara, Neil F., 117 Irene Dr., Vernon 06086
1969 Matthews, Lester G., 303 West Main, Freehold, New Jersey 07728
1937 McCue, Martin P., 473 Boston Post Rd., Waterford 06385
1934 McDermott, John Francis, 1434 Punahou, Arcadia Apt., Honolulu, Hawaii 96822
1934 Menousek, Joseph Albert, 270 Celestial Way, Juno Beach, Florida 33408
1946 Messina, Michael C., 337 Southern Comfort Park, Clearwater, Florida 33515
1973 Moon, Won Koul, 106 Litchfield, Torrington 06790
1954 Motyka, Stanley J., 10092 Merrimac Dr., Huntington Beach, California 92640
1960 O'Connor, Luke Edward, 57 Union, Rockville 06066
1935 Papa, John Smith, 1950 N.E. 59th Pl., Fort Lauderdale, Florida
1930 Parshley, Philip Ford, Box 509, Pinehurst, North Carolina 28374
1926 Partridge, Winthrop Prescott, 35 Isla Bahia Dr., Fort Lauderdale, Florida 33316
1952 Pepper, Dickerson Sergeant, 1414 Stony Circle, Gladwyne, Pennsylvania 19035
1969 Pet, Donald, Ct. Alcohol & Drug Tr. Ctr., 294 Colony, Meriden 06450
1930 Pullen, Richard Woollard, 2nd General Hospital, Landstuhl, Germany A.P.O. 09180
1972 Rich, Charles F., Jr., 141 Broad, Middletown 06457
1923 Robinson, Wilfred John, P.O. Box 7052, Christiansted, St. Croix 00820
1953 Schwartz, Harold, 5025 N. Paulina, Chicago, Illinois 60640
1953 Stapor, Joseph John, 536 Gospel Lane, Orange 06477
1930 Steincrohn, Peter Joseph, 1430 Ancona Coral Gables, Florida 33146
1936 Stewart, Lester Quentin, 33 Erickson Way, South Yarmouth, Mass. 02664
1932 Talbot, Henry Pierce, 259 Shamrock Blvd., Venice, Florida 33595
1941 Tutles, Alexander James, 2780 Atlantic, #3, Melbourne Beach, Florida 32951
1937 Unsworth, Arthur Charles, P. O. Box 606, Center Harbor, New Hampshire 03226
1957 Warren, David L., Choctaw Health Center, Rt. 7, Box R-50, Philadelphia, Mississippi 39350
1934 Weiner, Julius Gills, 3580 S. Ocean Blvd., South Palm Beach, Florida 33480
1931 Weisenfeld, Nathan, 1445 Tamiami Trail, Sarasota, Florida 33580
1962 Woolpert, Keith Dellan, 880 S. E. Jackson, Roseburg. Oregon 97470
1967 Zlotsky, Norman A., 57 Union, Rockville 06066
1950 Zyla, Edward J., 23 Maple, Rockville 06066

Litchfield County Association

President: Robert L. Fisher, Sharon Clinic, Sharon 06069
Vice-President: Peter Gott, Main, Lakeville 06039
Secretary-Treasurer: Frank Lovallo, Sharon Med. Arts Ctr., Hospital Hill, Sharon 06069
Councilor: Robert W. Harkins, P.O. Box 449, Woodbury 06798
Associate Councilor: Romeo A. Vidone, 880 Racebrook Rd., Orange 06477
Annual Meeting, Second Tuesday in April
Semi-Annual Meeting, Second Tuesday in October

COLEBROOK 06021

1973 Fletcher, Robert G., Box 102
1957 Luchs, David, Schoolhouse Rd.
1967 Ragland, Stuart, Jr., Smith Hill Rd.

CORNWALL 06753

1922 Walker, Wilmarth Bradford

FALLS VILLAGE 06031

1946 Bornemann, Carl, Beebe Hill Rd.

HARWINTON 06790

1938 Kott, Joseph Henry, Cobble Rd.

KENT 06757

1966 Goss, John D., Jr., Macedonia Rd.
1946 Greiner, George Frederick, Kent School
1976 Marlow, Dorothy Jeannette, Box 339
1963 Peters, Donald Henry, Elizabeth

LAKEVILLE 06039

1945 Brewer, Alfred Edwin, Main
1966 Gott, Peter, Main
1970 Swift, David Bearce, P.O. Box 153
1968 Westsmith, Richard Alan, Main

LITCHFIELD 06759

1946 Chait, Sidney A., Box 1082, Woodruff Ct.
1946 Dautrich, Albert William, West
1966 MacMaster, Duncan Raymond, Prospect
1939 Warner, C. Norton, North

NEW HARTFORD 06057

1942 Markwald, Heinz Wolfgang, Main

NEW MILFORD 06776

1949 Baird, Robert Desmond, 30 Park Lane East
1967 Danzig, Samuel D., New Milford Medical Building
1963 Estrada, Julian Albert, New Milford Medical Building
1952 Ferris, Jeffrey, 62 Bank
1956 Happel, Elizabeth, 62 Bank
1957 Haxo, John Victor, 15 Old Park Lane Rd.
1938 Ignace, Stephen J., 65 Bridge
1973 Kavirajan. Vadakkekara, 15 Old Park Lane
1964 Lahvis, W. Frederick, P. O. Box 148
1975 Mabasa, Ramon Albar, 15 Old Park Lane Rd.
1949 Morrow, Howard S., 30 Elm
1971 Nagaraja, Urabagilu, 62 Bank
1975 Orlandi, Robert Joseph, 15 Old Park Lane
1947 Street, John M., P. O. Box 777

NEW PRESTON 06777

1971 Abreu, Francisco B., R.F.D. #1
1973 Peck, Morgan Scott, Bliss Rd., R. F. D. 1

NORFOLK 06058

1937 Barstow, Richard Iddings, The Village Green
1975 Prouty, Robert L., Litchfield Rd.

NORTH CANAAN

CANAAN 06018

1935 Elliott, John Richard, Main

ROXBURY 06783

1964 McDonald, Robert L., Roxbury Falls Rd.

SALISBURY 06068

1943 Mackay, William D.
1955 Smith, Frank Edward, Jr., Main

SHARON 06069

1975 Brown, Malcolm Michael, Sharon Clinic
1973 Charde, John Patrick, Sharon Clinic
1968 Collins, Richard Neil, Sharon Clinic
1975 Colman, Neil D., Hospital Hill
1972 Finkelstein, Jack, P. O. Box 566
1949 Fisher, Robert Lownds, Sharon Clinic
1948 Fowler, George A., Sharon Clinic
1962 Gallup, John William, Sharon Clinic
1947 Gevalt, Frederick C., Jr., Sharon Clinic
1947 Grendon, David Arthur, Sharon Hospital
1942 Gudernatch, Gaert Steuerwald, Main
1975 Hajek, Joseph. Sharon Clinic
1949 Haydock, George Guest, Sharon Clinic
1975 Henisz, Anna Krystyna, Sharon Hospital
1960 Laning, George Michie, Morey Rd.
1973 Longstreth, George, Sharon Clinic
1951 Lovallo, Frank, Sharon Med. Arts Ctr., Hospital Hill
1969 Mirabile, Charles Samuel, Jr., Sharon Clinic
1953 Moore, Roger W., Sharon Clinic
1966 Reyelt, Walter Peter, Jr., Sharon Clinic
1975 Ryan, Robert H., Sharon Clinic
1974 Tesoro, Michael Richard, Main
1971 Tiedemann, Richard N., Main
1953 Waugh, David Darwin, New
1976 Weeks, Carnes, Jr., Sharon Hospital
1975 Wright, Ann B., White Hollow Rd.

SHERMAN 06784

1967 Niemann, Claus Peter, P.O. Box 74

SOUTH KENT 06785

1974 Mellisy, Andrew, Rt. 341 & South Rd.

TERRYVILLE 06786

1976 Beup, Leonardo Perez. 63 Main
1951 Coral, Mark, 9 Maple
1974 Rich, Joseph, Washington Rd.
1958 Wasley, David L., 14 Orchard

THOMASTON 06787

1946 Conklin, Clifford T., Jr., 16 Grand
1947 Samson, Daniel P., 147 Elm
1922 Wight, Winfield Emmons, 24 Goodwin Court

TORRINGTON 06790

1970 Abbott, Jay Lewis, 106 Litchfield
1946 Adams, Arthur John, Charlotte Hungerford Hospital
1972 Aitken, Gloria Stone, 540 Litchfield
1972 Anderson, Todd Edmund, Charlotte Hungerford Hospital
1950 Atwood, Albert Sterling, 30 Peck Rd.
1976 Barrett, John Joseph, Charlotte Hungerford Hospital
1972 Bernacki, Edward Joseph, Torrington Co., 59 Field
1966 Briggs, Robert Stewart, 30 Peck Rd.
1952 Brown, Freeman Fletcher, Jr., 540 Litchfield
1946 Buckley, John Littlefield, 148 Migeon Ave.
1950 Canniff, James Charles, 51 Main
1970 Curi Joseph F. J., Litchfield Hills Medical Center
1966 Danaher, Thomas H., 379 Prospect
1930 Danaher, Thomas Joseph, 379 Prospect
1946 Fabro, J. Alfred, 94 Church
1961 Farrell, Henry Francis, Peck Rd.
1963 Finn, Alfred Joseph, Jr., 379 Prospect
1972 Finnie, Jerrold Nelson, 1185 New Litchfield
1970 Galloway, John Alexander, 106 Litchfield
1931 Giobbe, Michael Edward, 355 Prospect
1969 Glenn, John Spellman, 24 Church
1936 Goldberg, Isadore Solomon, 24 Church
1906 Griswold, Maude Taylor, Wolcott Ter.
1966 Gulliver, Ashbel Green, 1185 New Litchfield
1966 Heinrich, Ward Dittmar, 24 Church
1949 Huvelle, Camille Henry, Peck Rd.
1954 Irwin, John Britton, 1185 New Litchfield
1947 Katzin, Benjamin, 30 Peck Rd.
1962 Kramer, Richard Thomas, 24 Mason
1973 MacDonald, Carlton A., Charlotte Hungerford Hospital
1975 Mactal, Josefino Alejandro, 540 Litchfield
1953 McKenna, James Francis, 379 Prospect
1952 Meunier, John Louis, 24 Church
1942 Mitchell, Gerald Vincent, 185 Albert
1938 Murcko, William John, 253 Main
1971 Nesbitt, Kenneth A., Charlotte Hungerford Hospital
1938 Orlowski, Andrew Williams, 64 Belleview Ave.
1966 Pimpinella, Ronald J., 30 Peck Rd.
1954 Polito, John Clarke, 24 Church
1975 Privitera, Joseph Henry, Charlotte Hungerford Hosp.
1949 Robertson, Alexander Rocke, P. O. Box 1107
1975 Romanos, Daniel Raymond, 94 Church
1932 Samponaro, Nicholas, 241 Main
1974 Sansing, James G., 185 Albert
1973 Scalice, Robert Angelo, 30 Peck Rd.
1976 Seleman, Alden Walter, Charlotte Hungerford Hospital
1947 Smith, James Thomas, 148 Migeon Ave.
1966 Smith, Reginald Donald, Charlotte Hungerford Hospital
1962 Vanoni, Frank Robert, 379 Prospect
1953 Walker, Thomas H., 30 Peck Rd.
1956 White, Fowler F., 180 Marcia Dr.
1975 Wilton, Robert Edward, (D.O.) 1185 New Litchfield

WASHINGTON 06793

1973 Clark, Morris Leo, On-the-Green
1968 Fearon, Henry Dana, Washington Green
1958 Hays, David R., Jr.

WASHINGTON DEPOT 06794

1946 Simonds, John Rolf, Box 228

WATERTOWN 06795

1976 Bassford, William W., 57 DeForest
1946 Caney, Wilbur Hinds, 429 Main
1951 Goerner, Jessamine Roberta, 404 Main
1949 Martin, Katharine Hawley, Butternut Lane
1936 Meyers, Royal Abbott, 210 Guernseytown Rd.
1970 Weber, Donald John, 459 Main

WEST CORNWALL 06796

1947 Linder, James H., 280 W. Cornwall-Sharon Rd.

WINSTED 06098

1969 Briggs, Harry Caldwell, 71 Spencer
1936 Cornelio, Francis Joseph, 45 Elm
1965 Dutton, Richard Sanders, 71 Spencer
1969 Gallo, Erly Paul, 10 Hinsdale Ave.
1937 Gallo, Francis, Medical Arts Building
1962 Husvet, Ferenc, 71 Spencer

1954 Izumi, Ernest Matson, R.F.D. No. 1
1964 Kaess, Kenneth Richard, Winsted Memorial Hospital
1936 Levy, Aaron, 26 Elm
1969 McCabe, Edward B., Winsted Memorial Hospital
1971 Munch, Richard Valentine, 71 Spencer
1968 Pierce, John M., 71 Spencer
1947 Reidy, Joseph Carey, 43 Walnut
1972 Sherman, Roy B., Rugg Brook Rd., R. F. D. 3
1969 Smith, Norman Eugene, Jr., 71 Spencer
1955 Tury, Leslie Akos, R.F.D. #1, Bunnell
1974 Whelchel, Lynn W., Jr., 71 Spencer

WOODBURY 06798

1948 Cushman, George Lester, Judson Ave.
1967 Harkins, Robert William, P.O. Box 449
1976 Tuerk, Benjamin, Jr., Linden Rd.

OUT OF COUNTY

1975 Dah, Naja Mehernosh, 25 Balance Rock Rd., Seymour 06483
1938 Dobbs, William G. H., 13680 N.W. Roanoke Lane Portland, Oregon 97229
1960 Dolan, Virginia Louise, ℅ Majewski, P.O. Box 103, Blakeslee, Pa. 18610
1942 Downs, Elinor Fosdick, Stoneleigh, Alger Court, Bronxville, New York 10708
1931 Evarts, Josephine, Millerton, New York 12546
1935 Kilgus, John Frank, Jr., Sunrise Dr., Avon 06001
1966 McCarthy, Joseph Clark, Box 5347, Evansville, Indiana 47715
1966 Mino, Manuel Eduardo, 119 Lantern Lane, Wethersfield 06109
1970 Montoni, Edward John, 5 Wintergreen La., West Simsbury 06092
1919 Reade, Edwin Godwin, 315 Knollwood Village, Southern Pines, North Carolina 28387
1942 Riendeau, Fernand Maurice, 14 Cromwell Ct., Old Saybrook 06475
1942 Riendeau, Pauline Laure, Cromwell, Old Saybrook 06475
1957 Spencer, Susan Benedict, 342 West Palmetto. #5, Florence, South Carolina 29501
1963 Vidone, Romeo Albert, 880 Racebrook Rd., Orange 06477
1939 Wilcox, Lloyd M., 124 Main, Bristol 06010
1967 Zeffiro, Ronald Gordon, 40 Timrod Rd., West Hartford 06107

Middlesex County Association

President: Benjamin M. Shenker, 1251 South Main, Middletown 06457
Vice-President: Patrick R. Concannon, Wildwood Med. Ctr., Essex 06426
Secretary-Treasurer: Kenneth M. Robbins, 760 Saybrook Rd., Middletown 06457
Councilor: W. Raymond James, 64A North Main, Essex 06426
Associate Councilor: Herbert Magram, 45 Crescent, Middletown 06457
Annual Meeting, Second Thursday in April
Semi-Annual Meeting, Second Thursday in October

CHESTER 06412

1954 Wheeler, Gordon Bartlett, Kings Highway, R.F.D. No. 1

CLINTON 06413

1974 Kerr, Robert John Noel, 37 Commerce
1937 Rindge, Norman Pember, 147 East Main

CROMWELL 06416

1963 Adams, Henry Alexander, 384 Main
1958 Cornett, Samuel James, 8 Woodlawn Dr.
1934 Couch, Frank Hallock, 32 Prospect Hill Rd.
1969 Crowther, Daniel F. S., 269 Main
1940 Grant, Richard Francis, 482 Main
1972 Macionus, Raymond Francis, 269 Main
1928 Nelson, Walter Nathaniel, 360 Main
1967 Waldman, Arthur Leslie, 269 Main

DEEP RIVER 06417

1939 Lobb, Russell Albert, 1 Essex
1974 Snyder, Elise W., Cedar Swamp Rd.

DURHAM 06422

1974 Sinnamon, Rita C., Creamery Rd.
1964 Voelkening, Burkhard Wolfgang, Carriage Dr.

EAST HAMPTON 06424

1934 Soreff, Louis, 9 West High
1970 Thomas, John M., RR4, Town Farm Rd.

ESSEX 06426

1942 Ames, William Gard, 64A North Main
1972 Baldwin, David Bruce, Middlesex Tpke.
1971 Bardenheier, Joseph Alexander, Wildwood Medical Building
1967 Buebendorf, Donald Philip, Middlesex Tpke
1975 Dwyer, Robert Dennis, Wildwood Medical Bldg.
1971 Goetcheus, John Stewart, Middlesex Tpke.
1949 Harris, Augustus Ludlow, Hilltop Ave.
1948 James, Walter Raymond, 64A North Main
1973 Maron, Theodore William, Jr., Middlesex Tpke.
1974 Pierson, Paul Starrett, 26 Main
1954 Stanford, John, 64A North Main
1974 Tucker, Edward Sporl, 64A North Main
1941 Twachtman, Eric, Plains Rd.

HIGGANUM 06441

1965 Havlicek, Joseph Anthony, Route 9
1972 Kilga, Lawrence A., Lt. Shubael Rd.
1948 Korab, John Joseph, High
1973 Pringle, Eleanor W., Killingworth Rd.

KILLINGWORTH 06417

1951 Bauer, William Frederick, Jr., Fire Tower Rd.

MIDDLETOWN 06457

1973 Abad, Alex A., Connecticut Valley Hospital
1969 Adams, Richard, Shoreline Surgical Assoc., 195 South Main
1962 Arafeh, Mehadin Kamel, Connecticut Valley Hospital
1969 Arena, Anthony Joseph, 770 Saybrook Rd.
1952 Arnault, Donald George, 80 South Main
1960 Bellobuono, John R., 210 South Main
1976 Bernstein, Alan Elihu, 1251 South Main
1971 Bertuch, Albert William, 195 South Main
1976 Brown, Dewees Harold, 77 Crescent

1971 Buchalter, Daniel Joel, 80 South Main
1941 Buckley, Willard Emrich, 770 Saybrook Rd.
1975 Campbell-Jacobs, Richard M., 1251 South Main
1974 Catrini, Vincent Julian, 770 Saybrook Rd.
1969 Cerritelli, Dominick Henry, 45 Crescent
1963 Ceulemans, Cyril Peter, 770 Saybrook Rd.
1955 Chace, Charles Winslow, 760 Saybrook Rd.
1973 Clark, Samuel, Jr., 770 Saybrook Rd.
1942 Crampton, Clair Beebe, Wesleyan Univ.
1958 Daukas, Nicholas James, 124 Washington 06457
1959 DeVille, Desmond Bancroft, 80 South Main
1972 Donadio, Joseph A., 80 South Main
1947 Epstein, Joseph I., 195 South Main
1972 Fiducia, Joseph Paul, 80 South Main
1969 Fischbein, Frederic Ian, 80 South Main
1975 Flanagan, Joseph Aloysious, 80 South Main
1962 Gallo, Sebastian John, Middlesex Memorial Hospital
1972 Ganguli, Prabhash Chandra, 28 Crescent
1971 Geiser, Frank M., Middlesex Memorial Hospital
1968 Gerz, Hans O., 75 Acer Dr.
1975 Gersten, Steven P, 210 So. Main
1971 Gordon, Eric, P.O. Box 467
1967 Gorin, Malcolm, 195 South Main
1974 Hall, William A., Wesleyan Univ.
1920 Harvey, Carl Clifford, 20 Silver
1948 Harvey, Sanford W., Ballfall Rd.
1948 Harwood, Clarence W., 80 South Main
1968 Hickox, David Beattie, 80 South Main
1974 Hoffman, Daniel, 60 Crescent
1971 Johnson, David Porter, Middlesex Memorial Hosp.
1974 Kalayjian, David Bernard, 1251 So. Main
1965 Kaufmann, Herbert Alfred, 770 Saybrook Rd.
1956 Kelly, John Francis, 770 Saybrook Rd.
1975 Kelly, Margaret DePonte, 256 Old Mill Rd.
1951 Korn, Francis Edwin, 195 South Main
1928 LaBella, Louis Onorato, 760 Saybrook Rd.
1969 Lambe, Michael Joseph, 11 Orchard Hill La
1964 Lambe, Thomas Peter, 70 Crescent
1973 Lee, John P., 80 South Main
1952 Levine, Herbert, 770 Saybrook Rd.
1965 Longo, Edward Anthony, 28 Crescent
1957 Magram, Herbert, 45 Crescent
1975 Mahmud, Abdul Wazed, 547 Main
1957 Manzi, Joseph Alexander, 80 South Main
1970 McCarthy, Robert Emmett, 80 South Main
1954 McDowell, Arthur Vennall, 28 Crescent
1963 McKay, Donald, 770 Saybrook Rd.
1940 McLeod, Christie Ellen, 466 Maple Shade Rd.
1966 Miller, Donald Edwin, 80 South Main
1934 Minor, Lloyd Wesley, 329 Coleman Rd.
1969 Nadel, Martin S., Middlesex Memorial Hospital
1939 Palmieri, Mario Lorenzo, 200 Coleman Rd.
1958 Pella, Juan, 243 Main
1956 Pennington, Robert Breece, 80 South Main
1965 Perlin, Louis, 170 Oakcliff Rd.
1959 Prins, Sal A., 67 Old Mill Rd.
1974 Rabuffo, Jeffrey Vincent, 770 Saybrook Rd.
1943 Rafkind, Abraham Benjamin, 212 Hunting Hill Ave.
1972 Robbins, Kenneth Mark, 760 Saybrook Rd.
1965 Rosenbaum, Howard T., Middlesex Memorial Hospital
1933 Schwartz, Philip Edward, 195 South Main
1957 Sheehan, Felix Gerard, 589 Saybrook Rd.
1945 Shenker, Benjamin Morton, 1251 South Main
1940 Sherwood, Henry, 195 South Main
1970 Silberstein, Allen B., 28 Crescent
1968 Sosa, Juan B., 109 Broad
1929 Speight, Harold Edmund, 70 Crescent
1969 Stoane, Leonard, Middlesex Memorial Hospital
1924 Sweet, Alfred Norton, 770 Saybrook Rd.
1957 Sweet, Richard Tallmadge, 770 Saybrook Rd.
1949 Thomson, Archibald Wilson, Jr., 80 South Main
1946 Thumim, Mark, 760 Saybrook Rd.
1947 Toll, Nina, Box 413 06458
1973 Torop, Paul, 109 Broad
1933 Tracy, F. Erwin, 195 South Main
1954 Turano, Andrew Frank, 80 South Main
1967 Twiss, Harry Younger, Ballfall Rd.
1942 Vinci, Vincent John, 770 Saybrook Rd.
1961 Welling, Searle Kistler, 80 South Main
1976 Yelinek, Laura, 1189 Washington, Apt. F-3
1967 Yue, James Kar-Kee, 80 South Main
1971 Zavod, Robert, 1 Yellow Birch Rd.
1974 Zavod, William A., 259 Prout Hill Rd.
1974 Zelinka, Miloslav, Wesleyan Univ.

MOODUS 06469

1946 Berwick, Philip, Box 19
1963 Paardenkooper, John, Falls Rd.

OLD SAYBROOK 06475

1971 Cook, Donald Edward, 840 Boston Post Rd.
1934 Greenberg, Aaron, 226 Main
1969 Gritzmacher, Richard Orlen, 840 Boston Post Rd.
1956 Irving, William David, 12 Old Boston Post Rd.
1976 Montano, Charles, 34 Pratt Rd.
1974 Rowett, Dale, Pleasant Hill Rd.
1946 Saunders, George Robert, P. O. Box 92
1971 Sheehan, Bernard F., 263 Main
1974 Thomas, Eric Joseph, 395 Main
1967 Wollack, Anne Carolina, P.O. Box A.W.

PORTLAND 06480

1968 Andrus, Wayne Burton, Stonegate Dr.
1954 Barton, Donn Coleman, 506 Main
1966 Coe, Margaret J., 2 Redberry Lane
1963 Dooley, John A., Grace Lane
1974 Eckhart, Kenneth L., 22 Michele Dr.
1970 Ghaussy, Aziz A., 28 Marlborough
1959 Gray, Philip, 9 Hall Hill Rd.
1947 Longo, Americo Domenico, 344 Main
1974 Niejadlik, Daniel Charles, 17 Michele Dr.
1941 Ryan, V. Gerard, 333 Main
1964 Spalding, Peter Edward, Penfield Hill Rd.

WESTBROOK 06498

1974 Cyrus, Roger Wesley, Boston Post Rd.

OUT OF COUNTY

1967 Burkle, Frederick Martin, Jr. Dartmouth Medical Ctr., Hanover, New Hampshire 03755
1970 Concannon, Patrick R., W.W. II Veterans Hospital Meriden 06450
1947 Green, Robert H., 26 Lovers Lane, Madison 06443
1975 Haight, Barry W., 351 Merline Rd., P.O. Box 2380, Vernon 06066
1974 Landow, Stephen S., 2 Chapel Dr., Pine Orchard, Branford 06405
1970 Martinson, Edgar O., 47 Shorelands Dr., Madison 06443
1961 Pernetti, Anthony Miles, Churchwood 2B, Niantic 06357
1971 Reed, Robert Leslie, 805 Fackler Dr., S.W., Huntsville, Alabama 35801
1926 Russman, Charles, 450 Golden Isles Dr., Apt. 2A, Hallandale, Florida 33009
1947 Sherman, Benjamin, 156 Palmetto Ave., N. Indialantic, Florida 32903

New Haven County Association

President: James W. Tierney, 221 Broad, Milford 06460
Vice-President: Patrick N. Brown, 95 East Main, Meriden 06451
Executive Director: William L. West, 270 Amity Rd., Woodbridge 06525
Councilor: John J. Mendillo, 628 George, New Haven 06511
Associate Councilors: Gioacchino Parrella, 2044 Bridgeport Ave., Milford 06460
Mehdi S. Eslami, 1389 West Main, Waterbury 06708
Business office: 270 Amity Rd., Woodbridge 06525
Annual Meeting, Fourth Thursday in March
Semi-Annual Meeting, Wednesday in October

ANSONIA 06401

1961 Aguiar, Jose Carlos, 121 Wakelee Ave.
1964 Cimmino, Gerald Nicholas, 121 Wakelee Ave.
1973 Flores, Jose C., 121 Wakelee Ave.
1946 Haddad, Fred Melad, 112 Pershing Dr.
1954 Hoffer, John Mathew, 121 Wakelee Ave.
1975 Iannotti, Salvatore, 20 Westfield Ave.
1963 Laubstein, Melvin Bernard, 20 Westfield Ave.
1961 Lin, Paul Tong Chang, 121 Wakelee Ave.
1957 Manjoney, Richard Charles, 20 Westfield Ave.
1973 Maric, Radoslav, 121 Wakelee Ave.
1942 Pepe, Anthony James, 3 Marshall Lane
1955 Petrie, Stewart Judson, 20 Westfield Ave.
1932 Renehan, John Michael, 1 Kingston
1964 Shapiro, Bernard Seymour, 121 Wakelee Ave.
1975 Silberberg, William Paul, 400 Main
1966 Smiley, Sheldon S., 121 Wakelee Ave.

BETHANY 06525

1960 Donnelly, John Emmitt, Clay Rd.
1953 Kleeman, James Allen, Bethmour Rd.

BRANFORD 06405

1934 Blanchard, Dana Lincoln, 687 Main
1934 Canfield, Norton, 229 Montowese
1974 Drakonakis, Andrew C., 650 Main
1966 Feola, Benjamin John, 896 Main
1945 Gencarelli, Alphonse Frank, 25 Woodside Dr.
1955 Goldenring, Herbert, 62 Kirkham
1976 Kirmser, Ralph Joseph, 95 Hampton Park East
1976 Levine, Robert Aaron, 960 Main
1962 Levy, Harold David, 140 Montowese
1929 Levy, Nathan, 140 Montowese
1943 Lindskog, Gustaf Elmer, 38 Griffing Pond Rd.
1956 Nickou, Nickolas, 687 Main
1966 Rosenbloom, Marshall Lewis, 62 Kirkham
1946 Rosenthal, Richard Louis, 687 Main
1962 Scherr, Edward Stanley, 960 Main
1971 Smith, Robert Pease, 93 Linden Ave.
1974 Stitelman, Michael, 211 Montowese
1958 Zimmerman, Marvin Paul, 960 Main

CHESHIRE 06410

1925 Allen, Edward Pratt, c/o Elim Park Baptist Nursing Home
1952 Armbruster, Lois Deming, Main
1953 Butler, Robert William, 146 Park Pl.
1949 Dayton, Charles John, 15 Chipman Dr.
1975 DiMauro, Louis Mario, 1175 South Main
1963 Grycz, Henry J., 432 Maple Ave.
1963 Heiger, Arnold Alexander, 1175 South Main
1960 Kramer, Fred Michael, 366 South Main
1975 Landy, Gail, 173 Brook Lane
1959 Mack, Gerhard T., 577 South Main
1973 Miller, Mary Margaret, 577 South Main
1960 Mirkhani, Mahmood, 1175 South Main
1923 Moore, Wilbur John, 15 Chipman Dr.
1940 Neff, William Everett, Jr., 93 Main
1939 Oxnard, Edward Warren, 15 Chipman Dr.
1974 Rauch, Erlinda, 416 Highland Ave.
1975 Smith, Gordon Waldo, 402 Highland Ave.

DERBY 06418

1970 Baker, Earl Lewin, 314 Elizabeth
1968 Boltax, Robert Stanley, 299 Seymour Ave.
1968 Bratu, Marcel, 445 New Haven Ave.
1971 Brown, William Tibor, 314 Elizabeth
1969 Cadelina, Wilfredo Enriquez, 130 Division
1965 Catanuto, Nicholas Thomas, 435 New Haven Ave.
1969 Davidson, Alan Cahn, 445 New Haven Ave.
1956 DeLuca, Vincent Alfred, Jr., 130 Division
1966 Dineen, Joseph Patrick, 299 Seymour Ave.
1975 DiPasquale, Ned M., Plaza-on-the-Green
1958 Doheny, James Joseph, 435 New Haven Ave.
1974 Fine, Norman L., Griffin Hospital
1966 Gagliardi, Joseph Matthew, Jr., 67 Maple Ave.
1946 Galen, Jack Harris, 445 New Haven Ave.
1966 Habib, Nabil Iskander, 299 Seymour Ave.
1957 Holden, Jack, 445 New Haven Ave.
1971 Lawson, Jack Philip, Griffin Hospital
1970 Levy, Richard Martin, 67 Maple Ave.
1959 Milazzo, Nicholas Joseph, 299 Seymour Ave.
1961 Miller, Dwight Frank, Griffin Hospital
1974 Moll, David, 299 Seymour Ave.
1971 Myerson, Daniel Allen, Griffin Hospital
1971 Myerson, Paul J., Griffin Hospital
1975 Narowski, Cecilia A., 17 Elizabeth
1944 Narowski, John Joseph, 17 Elizabeth
1910 Parlato, Michael Antonino, 101 Sentinel Hill Rd.
1969 Pavlo, Ludwig Joseph, 380 New Haven Ave.
1969 Pavlo, Maria Margarete, 380 New Haven Ave.
1975 Pearlstein, Arthur T., Plaza-on-the-Green
1925 Rentsch, Samuel Burton, 61 Seymour Ave.
1975 Scarpa, Francis Joseph, 299 Seymour Ave.
1975 Schwartz, Kenneth V., Griffin Hospital
1964 Sikorski, Jerzy Jan, Griffin Hospital
1967 Silverstein, David M., 5 Maple Ave.
1974 Slepian, Jacob Zeiger, 101 Elizabeth
1968 Stier, Stanley D., 435 New Haven Ave.
1958 Wirth, Michael Nahum, 58 Minerva
1962 Wugmeister, Michael, Griffin Hospital

DEVON 06462

1947 Malone, Robert Francis, 21 Rivercliff Dr.

EAST HAVEN 06512

1950 Albis, Francis Joseph, 60 Edward
1952 Albis, Michael Daniel, 60 Edward
1940 Balletto, Vincent 535 Thompson Ave.
1929 Fiskio, Peter William, 280 Main
1940 Garofalo, Mario Louis, 80 Morgan Ave.
1961 Mancini, Anthony D., 176 Tyler
1924 Taylor, Robert Mitchell, 578 Thompson Ave.
1953 Van Eck, William Frederik, 300 Main
1954 Vermande, Gertrude Joanna, 300 Main

GUILFORD 06437

1951 Adams, Elisabeth C., On the Green
1963 Brogden, John Malcolm, 152 Broad

1974 Crawford, William Osgood, 264 Church St.
1958 Cunningham, Peter Ritsher, 152 Broad
1974 Cwik, Ronald Arthur, 152 Broad
1954 Emery, Felice Menuez, 85 Long Hill Rd.
1976 Fink, Martin E., 150 Boston
1973 Hamaty, Daniel, 308 Clapboard Hill Rd.
1948 Horton, William Hanson, Falcon Rd., Sachem's Head
1952 Igersheimer, Walter Wilhelm, 111 Dolan Dr.
1971 Lowry, Elizabeth C., 152 Broad
1970 McGrath, Brian John, 29 Whitfield
1954 Mermann, Alan Cameron, 152 Broad
1971 Rapkin, Robert Michael, 17 Water
1963 Wakeman, Edward Maurice, 152 Broad

NORTH GUILFORD 06437

1960 Ventimiglia, Joseph J., 1304 West

HAMDEN

1958 Arnstein, Robert Leo, 79 Killdeer Rd. 06517
1955 Bellis John Marvin, Jr., 2804 Whitney Ave. 06518
1962 Brady, James Joseph, 2447 Whitney Ave. 06518
1955 Coe, Ronald Eliot, 1727 Whitney Ave. 06517
1973 Cohn, George Louis, 67 Charlton Hill 06518
1953 Colwell, Bradford Stevens, 299 Washington Ave. 06518
1936 Corey, Walter Van Arsdale, 1188 Whitney Ave. 06517
1940 Cutler, Hermann Shepard, 1100 Dixwell Ave. 06514
1935 D'Esopo, Joseph Nicholas, 174 Blake Rd. 06517
1964 Della Valle, Louis, 1199 Whitney Ave. 06517
1961 Ferranti, Redento D., 2458 Whitney Ave. 06518
1969 Fezza, Andrew John, 2572 Whitney Ave. 06518
1956 Fezza, Michael Lawrence, 2572 Whitney Ave. 06518
1959 Fischer, Daniel George, 99 Circular Ave. 06514
1970 Fishbone, Gerald, 50 Myra Rd. 06517
1973 Ghofrany, Fereshteh Naghshineh, 299 Washington Ave. 06518
1972 Ghofrany, Shukrullah, 299 Washington Ave. 06518
1948 Greenhouse, H. Robert, 1214 Dixwell Ave. 06514
1949 Haley, John Carlin, 295 Washington Ave. 06518
1972 Hambly, Robert Gagnon, 1100 Dixwell Ave. 06514
1951 Hart, Robert W., 295 Washington Ave. 06518
1971 Hyland, John, 200 Westwood Rd. 06518
1967 Jones, Charles Ray, 295 Washington Ave. 06518
1966 Kay, Foster, 2447 Whitney Ave. 06518
1946 Kertesz, Johann, 1110 Still Hill Rd. 06518
1949 La Femina, Nicholas Francis, 60 Dawes Ave. 06517
1972 Langenauer, Bernard J., 35 Lincoln 06518
1961 Levenstein, Marvin, 2572 Whitney Ave. 06518
1970 Levis, Albert Jesula, 295 Washington Ave. 06518
1958 Lion, Daniel Joseph, 1797 Whitney Ave. 06517
1956 Loewald, Elizabeth Longshore, 2 Bayberry Rd. 06517
1942 McKeon, James Joseph, 1828 Dixwell Ave. 06514
1940 Mendelsohn, William, 707 Mix Ave. 06514
1953 Milone, Henry Saverius, 1876 Whitney Ave. 06517
1954 Newton, Robert Floyd, 2508 Whitney Ave. 06518
1938 Parente, Leonard, 185 Braeside Dr. 06514
1949 Radowiecki, M. Walter, 196 Corbin Rd. 06517
1956 Rubin, Arthur A., 5 Hearn Lane 06514
1914 Russell, Thomas H., 46 Jackson Rd. 06517
1971 Saracco, Fernando P., 2458 Whitney Ave. 06518
1958 Schlessel, Theodore Elliot, 1100 Dixwell Ave. 06514
1948 Scholhamer, Charles Frederick, 9 Killdeer Rd. 06517
1929 Shure, Abraham Lewis, 22 North Lake Dr. 06517
1972 Silverman, Nira Rubin, 91 Corbin Rd. 06517
1946 Slater, Daniel, 1100 Dixwell Ave. 06514
1927 Slater, Morris, 1100 Dixwell Ave. 06514
1946 Snoke, Albert Waldo, 100 Santa Fe Ave. 06517
1966 Tjimis, Pavlos Demetriou, 2447 Whitney Ave. 06518
1947 Trifari, Leopold Mariano, 55 Ranch Rd. 06517
1943 Verstandig, Charles Coleman, 19 Filbert 06517
1945 Waldemer-Kertesz, Johanna, 1110 Still Hill Rd. 06518
1975 Weaver, Daniel C., P.O. Box 5427 06518
1961 Zale, Charles, 2331 Whitney Ave. 06518

MADISON 06443

1946 Birnbaum, Hyman Bunge, Boston Post Rd.
1968 Federico, John Vincent, 94 Five Fields Rd.
1976 Fox, Stewart, 220 River Rd.
1976 Sayers, Ross, 1089 Boston Post Rd.
1967 Sklaire, Martin William, Wall

MERIDEN

1963 Abrahams, Irwin Willard, 95 East Main 06451
1965 Albert, Marvin, W. W. II Veterans Mem'l Hospital 06450
1974 Alonso, Luis, 285 Broad 06450
1950 Badner, Donald, Harold, 405 Broad 06452
1959 Brown, Marion R. S., 95 East Main 06451
1947 Brown, Patrick Neely, 95 East Main 06451 and 133 Main, Bristol 06010
1948 Burbank, John, 335 Cook Ave. 06450
1969 Burch, Peter George, 477 South Broad 06450
1955 Butenas, Carl, 319 Hanover 06450
1929 Campbell, Sherburne, 1192 East Main 06451
1962 Campione, Matthew Philip, 405 Broad 06452
1937 Carey, William Clark, 377 Broad 06450
1976 Castro, Raymond A., Meriden Hospital Rad. Assoc. 06450
1962 Cocilovo, Vincenzo, Undercliff Mental Health Center 06450
1974 Cohen, Gary Mark, 219 W. Main 06450
1973 Concannon, Patrick Ronald, W.W. II Veterans Hospital 06450
1967 Conroy, Michael M., 473 Broad 06450
1949 Cusnir, Marion, 110 Colony 06450
1948 Dickinson, George Herbert, 199 West Main 06450
1946 DiGiandomenico, Albert Theodore, 95 East Main 06451
1956 Esposito, Michael Joseph, 379 Oregon Rd. 06450
1975 Flores, Silvia Emilia, P.O. Box 2415
1950 Flynn, Charles Thomas, Jr., 140 Green Rd. 06452
1948 Flynn, John Benedict, 377 Broad 06450
1940 Fox, George Graham, 140 Green Rd. 06452
1974 Franceson, Sergio Degan, 391 Broad 06450
1967 Franz, Adolph II, 140 Green Rd. 06452
1973 Friedman, Stanley Ira, 219 West Main 06450
1964 Fritz, Harvey Lawrence, 219 West Main 06450
1946 Giddings, James Curtis, 412 South Broad 06452
1946 Glike, Frederick Philip, 12 Linsley Ave. 06450
1975 Goodman, D.T.H., 2 Brownstone Ridge 06450
1966 Goodman, Joseph Louis, 219 West Main 06450
1972 Gottlieb, Marvin B., 95 East Main 06450
1967 Guttenberg, Irving, 219 West Main 06450
1929 Hall, William Edward, 5 South Broad Ter. 06450
1974 Horton, Paul Chester, 234 Hobart 06450
1974 Jeshuran, Winston R., 340 Broad 06450
1959 Hennessey, John Francis, 181 Cook Ave. 06450
1975 Hollander, Michael Eugene, 71 Parker Ave. 06450
1957 Kahn, Daniel, 130 East Main 06451
1970 Kaplan, Harold Paul, 219 West Main 06450
1941 Katz, Irving, 304 Broad 06452
1944 Krochmal, Henry, P. O. Box 942 06450
1975 Lasser, Joan L., 335 Cook Ave. 06450

1973 Lehrman, Jerrold C., 377 Broad 06450
1975 Levin, Lewis, 224 Cook Ave. 06450
1939 L'Heureux, Jerome Arthur, 405 Broad 06452
1934 Lirot, Stephen L., 410 East Main 06450
1946 Lohrmann, Walter, 11 Live Oak Lane 06452
1970 McGann, Robert Farquharson, 224 Cook Ave. 06450
1975 Meyer, Louis, 405 Broad 06450
1934 Misuk, Joseph Francis, 430 Broad 06452
1972 Moreschi, Francesco Panfilo, 199 West Main 06450
1972 Morrison, Robert Francis, 285 Broad 06450
1976 Mullin, Robert Lester, Meriden-Wallingford Hospital 06450
1960 O'Regan, Patrick Tobias, 24 Columbus Ave. 06450
1975 Ortiz, Fernando, 21 Colony 06450
1969 Osadchey, Lance M., 108 Sweet Birch Dr. 06450
1920 Otis, Israel, 292 Thorpe Ave. 06450
1966 Paggioli, John William, 728 Paddock Ave. 06450
1956 Parke, David William, 477 South Broad 06452
1960 Patterson, Earl Stewart, 236 West Main 06450
1952 Pepe, Vincent, 71 Parker Ave. 06452 and 26 Fair, Wallingford 06492
1954 Persons, Ray E., 71 Parker Ave. 06452
1931 Pierson, Louis A., 199 West Main 06450
1967 Pratt, Hamp Smead, 405 Broad 06450
1966 Pyun, Kyum Sik, 181 Cook Ave. 06450
1973 Ritter, Maria Elisabeth, Meriden Memorial Hospital 06450
1947 Robb, Samuel Aloysius, 285 Broad 06450
1966 Russell, Brigid Ita, 81 Carpenter Ave. 06452
1966 Russell, William, 285 Broad 06450
1966 Scheer, Carl Weston, 335 Cook Ave. 06450
1956 Schurgast, Anselm W., 130 East Main 06451
1968 Shiffman, Irving, 219 West Main 06450
1954 Sillman, Eugene, 67 Lambert 06450
1942 Smith, Edward Rice, 543 West Main 06450
1957 Tonkonow, Francis Harold, 140 Green Rd. 06452
1950 Trent, Sophie Clara, 96 Boylston, North 06451
1963 Wagshul, Ely Cutler, 285 Broad 06450
1956 Wallace, Edward Paez, 285 Broad 06450
1946 White, Howard Thomas, 84 Live Oak Lane 06452
1971 Willett, Leo Vincent, Jr., 140 Green Rd. 06450
1954 Zimerman, Joseph, 319 Hanover 06450

MIDDLEBURY 06762

1953 Arnold, William Parsons, Jr., White Deer Rock Rd.
1975 Campbell, David I., Whittemore Rd.
1939 Hinchey, Richard James, Westwood Dr.
1957 Liao, Sung Jwi, Sky Line Dr.
1941 Riccio, Joseph S., Blueberry Knoll
1952 Ryan, Sylvester James, Breackneck Hill Rd.

MILFORD 06460

1934 Andrus, Oliver Burton, P. O. Box 415
1970 Baird, William Hennings, 105 North
1938 Barney, Walter Edward, 2044 Bridgeport Ave.
1974 Baron, Michael Austin, 75 New Haven Ave.
1970 Boyd, John Edward, 280 Broad
1956 Brandt, Allan Adolph, 2047 Bridgeport Ave.
1972 Brothers, David M., 135 Cherry
1949 Buckman, Robert Francis, 2068 Bridgeport Ave.
1975 Chandrashekara, Birur G., 2044 Bridgeport Ave.
1967 Chastanet, Denis Vernon Peter, 54 Darina Pl.
1957 Chiappinelli, Dante, 2044 Bridgeport Ave.
1969 Coassin, Nicholas Angelo, 75 New Haven Ave.
1962 Coppes, Henri R., 280 Broad
1963 Corsaro, Theodore Pascal, 2044 Bridgeport Ave.
1968 De Negre, Louis Mark, 2044 Bridgeport Ave.
1947 Elgosin, Richard B., Milford Hospital
1959 Fink, Howard David, 75 New Haven Ave.
1959 Fox, Marvin Irving, 122 Broad
1959 Gruskay, Frank Louis, 1 Golden Hill
1963 Hare, Edward Treen, Jr., 21 Cherry
1960 Hyland, Francis Joseph, 284 Broad
1960 Janet, Samuel J., 234 Broad
1964 Keegan, James Thomas, 75 New Haven Ave.
1959 Kerin, Robert, 112 Broad
1944 Langner, Helen P., 1 Shipyard Lane
1946 Lipkoff, Clarence Joseph, 2068 Bridgeport Ave.
1975 Lundborg, Carl Burton, 112 Broad
1972 Meia, Harley B., 122 Broad
1966 Messore, Giacomo, Milford Hospital
1971 Naiman, Peter T., 112 Broad
1962 Nuland, Sherwin B., 75 New Haven Ave.
1973 Pardi, Victor Morris, 123 Cedar Hill Rd.
1946 Parrella, Gioacchino, 2044 Bridgeport Ave.
1964 Philbrick, Clement John, Jr., 284 Broad
1974 Ragaza, Aleflor T., 2044 Bridgeport Ave.
1953 Rapoport, Leonard M., 75 New Haven Ave.
1975 Rosenthal, Benjamin B., 2051 Bridgeport Ave.
1959 Shelling, Richard Lawrence, 1 Golden Hill
1964 Stein, Michael Lewis, 1 Golden Hill
1933 Stetson, Harry Warren, 46 Robert Treat Pkwy.
1956 Tierney, James William, 221 Broad
1946 Timm, Alexander Berthold, Jr., 36 West Main
1947 Weston, Robert Alphaeus, Jr., 2068 Bridgeport Ave.
1968 Winters, Barry Michael, 73 Golden Hill
1964 Wolfson, Alvin, 284 Broad
1969 Yoon, Hee R., 2044 Bridgeport Ave.

NAUGATUCK 06770

1963 Cornacchia, Rocco, 567 Field
1963 Elser, John Peter, Church
1968 Falk, Maurice, 577 North Church
1958 Gerber, Edward, Jr., 305 Church
1976 Greengold, Julian Bart, 305 Church
1955 Hill, William Edward, Jr., 150 Meadow
1963 Labriola, Gerald, 577 North Church
1972 Ransome, Oscar John, 577 North Church
1975 Savarese, Edgar Cunningham, 156 Meadow
1940 Tylec, Leo Louis, 156 Meadow
1926 Williams, Edward Everett, 580 Hillside Ave.
1975 Yui Ching-Yi, 35 Porter Ave.

NEW HAVEN

1975 Aaronson, Robert M., 2 Church South 06519
1945 Albom, Jack Jonathan, 2 Church South 06519
1964 Albright, James A., 789 Howard Ave. 06504
1953 Alderman, Donald Bruce, 100 York 06511
1960 Alpert, Abraham Edward, 301 Orchard 06511
1967 Altshul, Victor A., 58 Trumbull 06510
1932 Amatruda, Frank Gabriel, 459 Orange 06511
1955 Ameen, Lane, 210 Prospect 06511
1964 Amore, Frederick Robert, 167 Maple 06511
1969 Anderson, Frederick Paffard, 150 Sargent Dr. 06511
1965 Arons, Marvin Shield, 2 Church South 06519
1968 Asis, Jose, 301 Orchard 06511
1969 Atocha, Jose, 1435 Chapel 06511
1975 Aversa, John Michael, 123 York 06511
1971 Baker, Sidney MacDonald, 150 Sargent Dr. 06509
1972 Balsam, Rosemary Harriett, 17 Hillhouse Ave. 06520
1954 Baratz, Merrill A., Yale Health Service 06520
1955 Barile, Albert William, 310 Winthrop Ave. 06511
1976 Barroeta, Gustaro R., 628 George 06511
1973 Barse, Richard Joseph, 1308 Chapel 06511
1973 Bartlett, Edward W., 357 Whitney Ave. 06511
1957 Baskin, Arnold M., 111 Park 06511

1930 Batelli, Clement Francis, 328 Townsend Ave. 06512
1955 Batt, Harold David, 301 Orchard 06511
1925 Battista, Anthony William, 111 Osborn Ave. 06511
1975 Baue, Arthur E., 333 Cedar 06510
1963 Beatrice, Marianne Angela, 1370 Chapel 06511
1974 Belleza, Norberto, Alegarbes, 789 Howard Ave. 06504
1965 Bender, Morton, 100 York 06511
1940 Berlowe, Max Llewellyn, 2 Church South 06519
1949 Berman, Sidney, 123 York 06511
1944 Berneike, Robert R., 878 Howard Ave. 06519
1955 Billings, William Clarke, Yale Health Service 06520
1940 Biondi, Benedict, 120 Blatchley Ave. 06513
1974 Bobrow, Samuel Miel, 111 Park 06511
1969 Boltax, Sandra Parzow, 333 Cedar 06510
1954 Bonner, George Arthur, 111 Sherman Ave. 06511
1960 Bove. Joseph Richard, Yale-New Haven Hospital Blood Bank, P. O. Box 1001
1963 Bradburn, Hubert Benjamin, 123 York 06511
1971 Bradford, Kenneth Alan, 2 Church South 06519
1967 Branch, James Christian, P. O. Box G, Westville Station 06515
1951 Brand, Elliott Saul, 123 York 06511
1967 Braverman, Irwin Merton, 333 Cedar 06510
1971 Brink, Adolph Joseph, 227 Church 06510
1962 Brochin, Malcolm, 136 Sherman Ave. 06511
1976 Brodner, Robert Albert, 333 Cedar 06510
1956 Brodoff, Stanley S., 2 Church South 06519
1935 Brody, Bernard Stephen, 114 Sherman Ave. 06511
1946 Bruno, Joseph Julius, 1266 Forest Rd. 06515

1943 Calabresi, Massimo, 300 Ogden 06511
1960 Camilleri, Joseph Angelo, 878 Howard Ave. 06519
1957 Cappucci, Louis William, 116 Avon 06511
1974 Carangelo, Edward Vincent, 313 Humphrey 06511
1916 Carelli, Genesis Frank, 256 Yale Ave. 06515
1972 Carlson, David Adelbert, 135 Whitney Ave. 06510
1949 Carter, Max George, 670 George 06510 and 3 Second Ave., Waterbury 06710
1964 Cassin, Carl Michael, 2 Church South 06519
1946 Castiglione, Frank Michael, 41 Trumbull 06510
1975 Cavallaro, Peter Julius, 2 Church South 06519
1932 Celentano, Luca Eugene Humbert, 442 Elm 06511
1975 Chang, Effie Chen-Chu, 111 Sherman Ave. 06511
1961 Chang, Suk Choo, 210 Prospect 06511
1975 Chen, Michael Graham, Yale Univ. Sch. Med. 06510
1946 Cheney, Charles Brooker, 111 Park 06511
1956 Chetrick, Allen, 2 Church South 06519
1975 Ciardiello, Kenneth Anthony, 2 Church South 06519
1947 Cipriano, Anthony Pasquale, 451 Orange 06511
1938 Clarke, Clement Cobb, 240 Bradley 06510
1946 Clement, David Hale, 2 Church South 06519
1935 Climo, Samuel, 291 Whitney Ave. 06511
1950 Cohart, Edward M., 60 College 06510
1971 Cohen, Lawrence Sorel, 333 Cedar 06510
1924 Cohen, William, 1435 Chapel 06511
1971 Cole, Jack Westley, 333 Cedar 06510
1964 Cole, Ransey Guy, 432 Dixwell Ave. 06511
1951 Coleman, Jules Victor, 135 Whitney Ave. 06510
1974 Collins, James Thomas, Jr., Hunter Radiation Therapy, Yale Med. Sch. 06510
1968 Collins, William Francis, 333 Cedar 06510
1931 Connolly, Arthur James, 136 Sherman Ave. 06511
1958 Conte, Bernard Lewis, 598 George 06511
1961 Conte, Harry Charles, 598 George 06511
1939 Conte, Mario Gero, 1435 Chapel 06511
1943 Conway, David Francis, Jr., 111 Sherman Ave. 06511
1970 Cooper, Richard Arnold, 315 Whitney Ave. 06511
1973 Coppola, Paul Joseph, 100 York 06511
1931 Corradino, Charles Louis, 2 Church South 06519
1955 Cousins, Marvin Lee, 1308 Chapel 06511
1975 Covey, Susan Singer, Hospital of St. Raphael 06511
1967 Cronin, Michael Thomas Ignatius, 67 Edgehill Rd. 06511
1975 Cruz, Luis R., 666 George 06511
1952 Cusanelli, Gabriel Nicholas, 235 Bishop 06511

1924 Dallas, Marion, 248 Bradley 06510
1935 D'Amico, Michael, 309 Edwards 06511
1971 Dann, Oliver Townsend, 190 Everit 06511
1951 Davey, Lycurgus Michael, 2 Church South 06519
1958 Davis, Clarence Daniel, 333 Cedar 06510
1973 DeDois, Victor K., 191 Sherman Ave. 06511
1942 de Forest, Gideon Knapp, 309 Edwards 06511
1951 Delgrego, Arthur L., 301 Orchard 06511
1951 D'Elia, Pierino Francis, 1423 Chapel 06511
1974 Della Porta, Joseph, 1471 Chapel 06511
1962 Del Pizzo, Alphonse, 1423 Chapel 06511
1964 Demir, Peter, 2 Church South 06519
1967 DePonte, Ralph Joseph, 123 York 06511
1943 de Suto-Nagy, Ilona Krasso, 139 Alston Ave. 06515
1961 Dock, Donald Stone, 1450 Chapel 06511
1956 Dolinsky, Albert Harold, 2 Church South 06519
1972 Dowaliby, James Michael, II, 2 Church South 06519
1965 Downing, Lewis Clinton, 1488 Chapel 06511
1976 Dwyer, Frances Doyle, 245 Lakeview Terr. 06515
1948 Dwyer, Hugh Leo, Jr., 2 Church South 06519

1954 Ebbert, Arthur, Jr., 333 Cedar 06510
1969 Edelson, Marshall, 25 Park, G.E.B. 617 06519
1967 Esdaile, Wilbur Walter, 466 Dixwell Ave. 06511
1968 Etkind, Edward Lawrence, 1546 Chapel 06511
1946 Etkind, Meyer George, 1546 Chapel 06511
1925 Evans, Theodore Schlosser, 309 Edwards 06511

1970 Fabbri, Remo, Jr., 31 High 06510
1971 Farber, Leonard Raymond, 111 Park 06511
1968 Farmer, Douglas Alexander, 1450 Chapel 06511
1950 Fasanella, Rocko Michael, 842 Howard Ave. 06519
1957 Fasano, Leonard Alfonse, 980 Whalley 06515
1964 Fazzone, Philip Robert, 670 George 06511
1968 Fearon, Richard Eubanks, 2 Church South 06519
1969 Fenn, John E., P.O. Box 1001, Yale-New Haven Hospital 06504
1966 Fenton, Robert H., 1423 Chapel 06511
1966 Ferando, Louis John, 1427 Chapel 06511
1973 Fessel, Jon Michael, 111 Park 06511
1951 Filer, Harry Lambert, Jr., 1423 Chapel 06511
1974 Finseth, Frederick James, 333 Cedar 06510
1966 Fischer, David Seymour, 111 Park 06511
1969 Fischer, James J., 789 Howard Ave. 06504
1948 Fitzpatrick, Eugene Joseph, 111 Park 06511
1973 Flagg, Stephen Vreeland, 111 Park 06511
1972 Flamm, Gerald Howard, 1450 Chapel 06511
1954 Fleck, Stephen, 333 Cedar 06510
1929 Flynn, Harold Aloysius, 464 Dixwell Ave. 06511
1953 Flynn, John Hine, 41 Trumbull 06510
1974 Forman, Barr H., 1401 Chapel 06511
1950 Forman, Joseph Bernard, 874 Howard Ave. 06519
1953 Fournier, Reginald E., 338 Alden Ave. 06515
1956 Frankel, Saul Arnold, 2 Church South 06519
1975 Frazier, William H., 333 Cedar 06510
1953 Frechette, Eugene Joseph, Jr., 1441 Chapel 06511
1963 Freedman, Jerome Kenneth, 1423 Chapel 06511
1951 Freedman, Morris, 169 Davenport Ave. 06519
1972 Freehill, Patrick J., 494 Winthrop Ave. 06511
1936 Freeman, David, 43 College 06510
1962 Friedman, Cyrus Robert, 65 Trumbull 06510
1940 Friedman, Irving, 860 Howard Ave. 06519
1941 Fuldner, Russell Victor, 178 Sherman Ave. 06511

1976 Galloway, Shelby, Hospital St. Raphael 06511

1976 Geha, Alexander S., 333 Cedar 06510
1937 Gentile, Angelo Louis, 1488 Chapel 06511
1937 German, William John, 2 Church South 06519
1923 Gettings, James Augustus, 256 McKinley 06515
1976 Gibson, Douglas W., Hospital St. Raphael 06511
1951 Gibson, Fred, 123 York 06511
1953 Glaser, Gilbert H., 333 Cedar 06510
1947 Glaser, William, 2 Church South 06519
1955 Glassman, Irving, 186 Sherman 06511
1926 Glazer, Morris, 71 Edgewood Way 06515
1949 Glenn, William W. L., 333 Cedar 06510
1974 Glickman, Morton G., Yale-New Haven Hospital 06504
1941 Godfried, Milton Simons, 85 Trumbull 06511
1947 Goetsch, John Black, 878 Howard Ave. 06519
1972 Goldblatt, Phillip Brian, 315 Whitney Ave. 06511
1957 Goldenberg, Ira Storin, 333 Cedar 06510
1958 Goldenthal, Sumner, 2 Church South 06519
1963 Goldstein, Jacob, 517 Ellsworth Ave. 06511
1954 Goldstein, Paul Stanley, 2 Church South 06519
1951 Golia, Ulysses Vitalio, 1423 Chapel 06511
1964 Goodman, Alan Herman, 2 Church South 06519
1971 Goodrich, Isaac, 2 Church South 06519
1950 Goodyer, Allan Victor, 333 Cedar 06510
1954 Gordon, Martin Eli, 111 Sherman Ave. 06511
1952 Gordon, Robert Stanton, 111 Park 06511
1968 Gottlieb, Felix Isaac, 1484 Chapel 06511
1975 Gouterman, Ira H., 333 Cedar 06510
1966 Graham, Andrew Jesse, 2 Church South 06519
1941 Granoff, Morris Aaron, 327 Whalley Ave. 06511
1975 Grauer, Leonard Edwin, 111 Park 06511
1975 Graziano, Antonio, 422 Dixwell Ave. 06511
1967 Greenberg, Alvin Donald, 2 Church South 06519
1924 Greenhouse, Barnett, 1687 Boulevard 06511
1960 Greenspan, Richard Henry, 333 Cedar 06510
1958 Greenwald, Willard F., Jr., 111 Park 06511
1939 Guida, Francis Paul, 1441 Chapel 06511
1964 Gurwitt, Alan Richard, 315 Whitney Ave. 06511

1962 Handler, Seymour L., 85 Trumbull 06511
1967 Hansen, Thomas Wilcox, 2 Church South 06519
1975 Hanson, Thomas Michael, 100 York 06511
1931 Harrison, Elizabeth Ross, 255 Bradley 06510
1935 Hart, James Clement, 820 Elm St. 06511
1953 Harvard, Bell Marvin, Jr., 2 Church South 06519
1952 Harvey, Richard Bennett, 251 Edwards 06511
1954 Hayes, Mark Allen, 333 Cedar 06510
1942 Hersey, Thomas Francis, 291 Whitney Ave. 06511
1973 Hicks, Jeanne E., 333 Cedar 06510
1970 Higgins, Don Cheney, 111 Park 06511
1943 Hodgkins, Charles Henry, 85 Trumbull 06511
1964 Hogan, Gilbert Francis, 100 York 06511
1970 Holley, Marshall, 226 Dixwell Ave. 06511
1966 Hook, Robert, 789 Howard Ave. 06504
1960 Houlihan, Robert Kenneth, 2 Church South 06519
1955 Hurwitz, Sidney, 2 Church South 06519
1973 Hurzeler, Marc A., 100 York 06511
1974 Isay, Richard Alexander, 100 York 06511

1967 Jackson, Stanley Webber, 34 Park 06519
1967 Jacobson, Harvey, 1485 Chapel 06511
1975 Jegasothy, Brian Vasanthakumar, 333 Cedar 06510
1938 Jordan, Robert Hough, 111 Park 06511
1949 Joseph, Lester George, 175 Bishop 06511

1974 Kaplowe, Joseph Louis, 1955 Sherman Ave. 06511
1967 Kashgarian, Michael, 310 Cedar 06510
1955 Katz, Jay, 65 Trumbull 06510
1951 Kazanjian, Norton Artin, 1423 Chapel 06511
1967 Kenney, James Duncan, 309 Edwards 06511
1976 Kerin, William, 301 Orchard 06511
1943 Kessler, Frederick, 100 York 06511
1975 Khachane, Vasant Bhojraj, 670 George 06511
1972 Khu, Enrico G., 191 Sherman Ave. 06511
1964 Kim, Kisik, 136 Sherman Ave. 06511
1962 King, Russell Patrick, 100 York 06511
1951 Kirchner, John Albert, 333 Cedar 06510
1965 Kitahata, Luke Masahiko, 789 Howard Ave. 06504
1938 Klatskin, Gerald, 333 Cedar 06510
1971 Knowlton, Arthur Howard, Yale-New Haven Hospital 06504
1974 Koenigsberg, Daniel Meir, 62 Trumbull 06510
1974 Koss, Neal, 333 Cedar 06510
1940 Koufman, William Bernard, 186 Sherman Ave. 06511
1965 Kra, Siegfried J., 2 Church South 06519
1964 Krassner, Leonard Sanders, 2 Church South 06519
1954 Kreis, David John, 2 Church South 06519
1972 Krizek, Thomas Joseph, 333 Cedar 06510
1942 Krosnick, Gerald, 2 Church South 06519
1935 Krosnick, Morris Yale, 119 West Park Ave. 06511
1949 Kummer, Alfred John, 251 Edwards 06511
1937 Kushlan, Samuel Daniel, Yale-New Haven Hospital, P. O. Box 1001 06504
1976 Kutcher-Henchel, Jacqueline Ann, 111 Park 06511
1974 Kwass, Walter, 100 York 06511

1957 LaCamera, Robert George, 878 Howard Ave. 06519
1948 Lach, Frank Edward, 181 Edwards 06511
1961 Landau, Saul Jack, 111 Park 06511
1961 Lattanzi, William Edward, Hospital of St. Raphael 06511
1954 Laudano, Andrew John, 309 Edwards 06511
1936 Lavietes, Paul Harold, 150 Sargent Dr. 06511
1957 Lavietes, Stanley Robert, 2 Church South 06519
1949 Lavorgna, Michael Henry, 114 Sherman Ave. 06511
1948 Leavy, Stanley Arnold, 340 Whitney Ave. 06511
1974 Lebson, Robert Edward, 2 Church So. 06519
1972 Lee, Keat-Jin, 98 York 06511
1964 Lena, Richard Patrick, 878 Howard Ave. 06519
1957 Lerner, Aaron Bunsen, 333 Cedar 06510
1957 Lerner, Marguerite Rush, 333 Cedar 06510
1923 Levin, Hyman Alexander, 291 Whitney Ave. 06511
1969 Levine, Ira Richard 65 Trumbull 06510
1974 Levy, Arthur Louis, 2 Church South 06519
1956 Levy, Lewis L., 111 Park 06511
1972 Lewis, Dorothy Otnow, 309 Edwards 06511
1948 Lewis, Herbert Daniel, 111 Park 06511
1961 Lewis, Melvin, 333 Cedar 06510
1952 Lidz, Theodore, 333 Cedar 06510
1951 Lillian, Marvin, 17 Hillhouse Ave. 06520
1961 Lindenmuth, Woodrow Wilson, 333 Cedar 06510
1972 Litman, Robert B., 235 Bishop 06511
1976 LiVolsi, Virginia Anne, 310 Cedar 06510
1975 Livstone, Elliot Marsh, 333 Cedar 06510
1955 Loewald, Hans W., 65 Trumbull 06510
1927 Logan, William Joseph, 412 Whalley Ave. 06511
1972 Lujic, Petar, 1423 Chapel 06511
1974 Lynch, James Kevin, 2 Church South 06519
1975 Lynch, Vincent Arthur, 2 Church South 06519
1957 Lynch, William Francis, 1441 Chapel 06511
1963 Lytton, Bernard, 789 Howard Ave. 06504

1973 Magendantz, Henry Guenther, 17 Hillhouse Ave. 06520
1974 Mangi, Richard Joseph, 1450 Chapel 06511
1954 Manheim, Gilbert, 111 Sherman Ave. 06511
1963 Maniatis, William R., 41 Trumbull 06510
1972 Mansourian, Vazrick, 1423 Chapel 06511
1975 Marchesi, Vincent T., 310 Cedar 06510
1965 Margolis, Robert N., 2 Church South 06519
1963 Mark, Harry Horst, 2 Church South 06519

1946 Marshak, Irving Jacob, 254 College 06510
1974 Marshall, John Frederick, Yale-New Haven Hospital 06504
1928 Marvin, H. M., P.O. Box 404 06502
1967 Mass, Henry, 1552 Chapel 06511
1960 Massie, William Jacko, 288 Dixwell Ave. 06511
1957 Mattie, Louis Ralph, 1471 Chapel 06511
1969 Mattson, Richard Henry, 111 Park 06511
1934 McAlenney, Paul Francis, 2 Church South 06519
1966 McCarthy, Charles P. N., 2 Church South 06519
1972 McCullough, William Boyd, 2 Church South 06519
1949 McDonnell, Robert Ralph, 1441 Chapel 06511
1974 McFarland, Ward John, Jr., 31 High 06511
1974 McGarry, Mary E., 836 Edgewood Ave. 06515
1966 McGuire, Charles William, 174 Sherman Ave. 06511
1972 McKee, John Braxton, Jr., 58 Trumbull 06510
1975 McLoughlin, Michael Joseph, 1441 Chapel 06511
1947 Meigs, J. Wister, 30 College 06510
1955 Mendillo, John Joseph, 628 George 06511
1949 Michel, Lawrence Irwin, 1539 Chapel 06511
1938 Mignone, Joseph, 1450 Chapel 06511
1942 Millen, Samuel Robert, 545 Dixwell Ave. 06511
1961 Milles, Saul Steven, 100 York 06511
1954 Milstone, J. Haskell, 310 Cedar 06510
1955 Moench, John Christopher, 111 Park 06511
1942 Mogil, Marvin, 1481 Chapel 06511
1961 Molumphy, Paul Edward, 860 Howard Ave. 06519
1970 Mombello, Gary Edward, 2 Church South 06519
1930 Mongillo, Frank, P.O. Box 415 06502
1972 Montgomery, John Sloan, 850 Howard Ave. 06519
1955 Morgan, Walter Sherman, 111 Park 06511
1943 Mott, Frederick Edward, 136 Sherman Ave. 06511
1974 Mujtaba, Qaiyum, 310 Winthrop Ave. 06511
1970 Musto, David Franklin, 333 Cedar 06510
1944 Mylon, Ernst, 358 Central Ave. 06515

1968 Neumann, Hans H., 1 State 06510
1946 Newman, Harry Rudolph, 2 Church South 06519
1957 Niederman, James Corson, 333 Cedar 06510
1955 Nixon, James Thomas, 178 Sherman Ave. 06511
1960 Nolasco, Dario R., 111 Park 06511
1974 Noto, Philip John, 1423 Chapel 06511
1976 Oberkirch, Ann Marie, 210 Prospect 06511
1933 O'Brasky, Louis, 123 York 06511
1950 O'Connell, Edward Bernard, 1427 Chapel 06511
1965 Olson, Lowell Eugene, 860 Howard Ave. 06519
1955 O'Neill, John Joseph, 2 Church South 06519
1965 Ornston, Darius Gray, Jr., 255 Bradley 06510
1953 Palluotto, William Vincent, 1488 Chapel 06511
1949 Pantaleo, Carl Vito, 301 Orchard 06511
1971 Pardi, M. T., 620 George 06511
1951 Parisi, Anthony J., 178 Sherman Ave. 06511
1964 Passarelli, Nicholas Mario, 2 Church South 06519
1976 Pellegrino, Edmund Daniel, 333 Cedar 06510
1943 Pelliccia, Orlando, Jr., 27 Elm 06510
1956 Perlswig, Ellis A., 30 Bryden Ter. 06511
1976 Perras, David Arthur, 428 Columbus Ave. 06519
1975 Petrea, Ion, 123 York 06511
1974 Petrelli, Eligio A., 18 Trumbull 06510
1927 Petrelli, Joseph, 455 Orange 06511
1946 Petrillo, Charles, 2 Church South 06519
1953 Phillips, Carlton Charles, 2 Church South 06519
1935 Piazza, George Joseph, 690 Howard Ave. 06519
1942 Piccolo, Pasquale A., 114 Sherman Ave. 06511
1965 Pickett, Lawrence Kimball, 789 Howard Ave. 06504
1955 Pilot, Martin Lewis, 333 Cedar 06510
1966 Pinkes, Alexander Herman, 183 Bishop 06511
1931 Pinn, Abraham Samuel, c/o N. Levine, P.O. Box 3062 06515
1942 Pitegoff, Charles Haskell, 1395 Chapel 06511
1965 Polayes, Irving Marvin, 100 York 06511
1938 Poverman, David, 67 Trumbull 06510
1975 Prokop, Edward Kenneth, Hosp. St. Raphael 06511
1968 Prosnitz, Leonard Richard, 333 Cedar 06510
1974 Pruett, Kyle Dean, 315 Whitney Ave. 06511

1974 Raccuglia, Giovanni, 136 Sherman Ave. 06511
1973 Ragaza, Edgardo Pamintuan, 670 George 06511
1974 Ranieri, Alfred, Jr., 442 Elm 06511
1943 Redlich, Frederick Carl, 333 Cedar 06510
1974 Reiser, Morton Francis, 333 Cedar 06510
1952 Rhoades, Earl James, 111 Park 06511
1924 Riccitelli, Mariano Louis, 121 Fountain 06515
1946 Richards, William Raymond, 160 St. Ronan 06511
1965 Rifkin, Boris Gershuny, 1488 Chapel 06511
1973 Rigney, Brian Francis, 1450 Chapel 06511
1938 Rilance, Arnold Boon, 2 Church South 06519
1957 Riley, James Albert, 2 Church South 06519
1972 Riordan, Charles E., 100 York 06511
1951 Robinson, Franklin, 2 Church South 06519
1920 Rogers, Orville Forrest, 140 Ogden 06511
1964 Rosnagle, Robert Shields, 98 York 06511
1961 Rossi, Joseph Gerald, 17 Hillhouse Ave. 06520
1941 Roth, Oscar, 666 George 06511
1964 Roth, Stanley, 1423 Chapel 06511
1949 Roth, Stefanie Z., 666 George 06511
1941 Rozen, Alan Abraham, 113 Howe 06511

1967 Saccio, Joseph Dominick, 309 Edwards 06511
1975 Sachs, Frederick Lee, Hosp. St. Raphael 06511
1933 Salinger, Robert, 309 Edwards 06511
1974 Sasaki, Clarence Takashi, 333 Cedar 06510
1965 Savin, Ronald Clifford, 123 York 06511
1976 Schachter, Edwin N., Yale-New Haven Hospital 06504
1970 Schapira, Henri Jacques, 2 Church South 06519
1954 Scherr, Edward Howard, 111 Park 06511
1967 Schioppo, Dominic Blace, 1485 Chapel 06511
1976 Scholhamer, Charles Frederick, Jr., Yale-New Haven Hospital 06504
1972 Schowalter, John Erwin, 333 Cedar 06510
1974 Schreiber, Sanford Jay, 251 Edwards 06511
1963 Schrier, Robert I., 789 Howard Ave. 06504
1967 Schwartz, A. Herbert, 175 St. Ronan 06511
1965 Schwartz, Marc David, 26 Trumbull 06511
1975 Schwartz, Morris (Mark) L., 1546 Chapel 06511
1969 Schwartz, Solomon S., 1781 Boulevard 06511
1975 Scialla, Anthony V., 123 York 06511
1959 Seligson, David, 789 Howard Ave. 06504
1974 Sella, Enzo John, 123 York 06511
1961 Selzer, Richard Alan, 2 Church South 06519
1951 Senn, Milton J. E., 333 Cedar 06510
1976 Shapiro, Daniel Wortsman, 860 Howard Ave. 06519
1975 Shapiro, Donald Lawrence, 333 Cedar 06510
1949 Shapiro, Robert, 1450 Chapel 06511
1923 Shea, Michael Stephen, 500 Howard Ave. 06519
1974 Shimelman, Myer Morris, 315 Whitney 06511
1950 Shutkin, Ned Manfred, 2 Church South 06519
1963 Siegel, Bernard Shepard, 2 Church South 06519
1966 Siggins, Lorraine Deirdre, Yale Health Service 06520
1975 Sikand, Rajinder S., Hosp. St. Raphael 06511
1960 Silberstein, Morton Henry, 646 George 06511
1971 Silva, Hernan Rodrigo, 1435 Chapel 06511
1923 Silverberg, Samuel Joshua, 2 Church South 06519
1973 Silverman, Joel Peter, 690 Howard Ave. 06504
1956 Sirot, Gustave, 2 Church South 06519
1955 Skreczko, Charles Kazimir, 67 Trumbull 06510
1942 Smith, Frederick Francis, 226 Dixwell Ave. 06511
1959 Smith, Howard Willis, 98 York 06511
1963 Snow, Bernard, 65 Trumbull 06510

1927 Snurkowski, Charles Vincent, 487 Orange 06511
1973 Son, Yung H., 789 Howard Ave. 06504
1958 Southwick, Wayne Orin, 333 Cedar 06510
1939 Spinner, Samuel, 114 Sherman Ave. 06511
1955 Spiro, Howard M., 333 Cedar 06510
1976 Stanton, Robert Alan, 105 Alden Ave. 06515
1972 Stein, Stephen Alan, 2 Church South 06519
1960 Stern, Harold, 2 Church South 06519
1974 Stern, Robert, 135 Whitney Ave. 06510
1965 Stern, Stanley, 255 Bradley 06510
1946 Stilson, Carter, 309 Edwards 06511
1974 Stone, Elsa Louise, 708 Orange 06511
1974 Strothers, Gordon, 98 York 06511
1973 Stroup, Ralph Francis, 878 Howard Ave. 06519
1955 Stuermer, Virginia Mae, 2 Church South 06519
1970 Suesserman, Herbert I., 136 Sherman Ave. 06511
1954 Sumner, Martin Leonard, 111 Park 06511
1951 Swan, Bernard Robert, 226 McKinley Ave. 06515
1946 Swift, William Everett, 111 Park 06511
1963 Tofig, Rafi, 175 Grand Ave. 06513
1964 Toole, Allan Lawrence, 2 Church South 06519
1947 Tortora, Frank, 620 George 06511
1974 Troncale, Frank Joseph, 186 Sherman Ave. 06511
1963 Turkalo, Jaroslav Konstantin, 100 York 06511
1971 Van Gilder, John Corley, 333 Cedar 06510
1974 Varrone, John Charles, 181 Edwards 06511
1942 Vegliante, Michael E., 174 Bradley 06511
1941 Vollero, Andrew, 500 Howard Ave. 06519
1926 Wakeman, Edward Taylor, 240 Bradley 06510
1973 Wartel, Lawrence Jay, 136 Sherman Ave. 06511
1951 Waters, Levin Lyttleton, 310 Cedar 06510
1972 Watstein, George Joseph, 123 York 06511
1963 Weil, Ulrich Hans, 123 York 06511
1950 Weiner, Joseph, 256 Edwards 06511
1968 Weisinger, Philip I., 100 York 06511
1975 Weiswasser, Warren Howard, 333 Cedar 06510
1948 Wessel, Morris Arthur, 878 Howard Ave. 06519
1958 West, William Loren, 362 Whitney Ave. 06511
1952 Wexler, Henry, 340 Whitney Ave. 06511
1970 White, Augustus Aaron, 333 Cedar 06510
1936 Wies, Frederick Albert, 690 Howard Ave. 06519
1968 Wight, Leland Walter, Jr., 2 Church South 06519
1956 Wilson, George Leman, 670 George 06511
1931 Wilson, William Rives, 255 Bradley 06510
1975 Wiznia, Robert A., 850 Howard Ave. 06511
1969 Wolff, Emanuel Claud, 251 Edwards 06511
1954 Wong, Andrew S., 2 Church South 06519
1949 Wyatt, Herbert, 135 Whitney Ave. 06510
1965 Yanagisawa, Eiji, 98 York 06511
1958 Yudkin, Gerald Simeon, 257 Church 06510
1947 Zagraniski, Raymond Joseph, 1497 Chapel 06511
1971 Zamore, Leonard H., 136 Sherman 06511
1952 Zanes, Robert P., Jr., 1395 Chapel 06511
1968 Zanker, Theodore, 315 Whitney Ave. 06511
1974 Zegans, Leonard Saul, 34 Park 06519
1975 Zinn, Donald F., Yale-New Haven Hosp. 06504
1971 Zonana, Howard Victor, 836 Howard Ave 06519
1957 Zuckerman, Bernard D., 2 Church South 06519

NORTH BRANFORD 06471

1972 Cheung, Ernest Hang Fai, Foxon Rd., Rt. 80

NORTH HAVEN 06473

1956 Bornstein, Harold David, Jr., 30 Washington Ave.
1941 Cashman, Justin Laurence, 11 St. John
1974 Christoforo, John M., 59 Quinnipiac Ave.
1965 Errico, Austin Virchow, 256 Quinnipiac Ave.
1961 Fanning, James Bernard, 2 George
1937 Hess, Orvan Walter, 29 Old Orchard Rd.
1924 Jack, John Louis, 1415 Ridge Rd.
1964 Mulhern, Patrick Henry, 94 Washington Ave.
1940 Parrella, Louis Arnold, 25 Trumbull Pl.
1974 Sokhos, Dimitri Roy, 100 Broadway
1969 Solitare, Gilbert Bernard, 108 Ridgewood Ave.
1923 Taylor, Sterling Price, 1 St. John

ORANGE 06477

1967 Cohen, Gordon Seth, 328 Ann Rose Dr.
1973 Ephraim, Paul D., 291 Lambert Rd.
1968 Godley, John Allan, 291 Lambert Rd.
1975 Grundy, Gorlon William, 291 Lambert Rd.
1970 Kaminsky, David M. 291 Lambert Rd.
1952 Karlovsky, Emil Daniel, 291 Lambert Rd.
1971 Kondo, Koretada, 829 Beechwood Rd.
1969 Lanzi, Robert Anthony, 291 Lambert Rd.
1972 MacRae, Douglas William, 246 Wilson Rd.
1966 Marieb, Norman Joseph, 266 Hemlock Dr.
1956 Morrison, John Blaisdell, 291 Lambert Rd.
1972 Paust, Joan Carol, 320 Manley Heights
1966 Piotrowska-Nyerick, Krystyna Isabella, 513 Howellton Rd.
1961 Polsky, Elliot, 471 Derby-Milford Rd.
1972 Sreenivas, Venkatachala I., 235 Midland
1954 Thompson, Maurice Bainton, 341 Knight La.
1967 Vogel, Robert Mannes, 291 Lambert Rd.
1947 White, Robert Morris, 685 Old Grassy Hill Rd.
1971 Zelson, Joseph H., 291 Lambert Rd.

OXFORD 06483

1970 Boissevain, Andre R., 109 Quaker Farms Rd.
1938 Chobian, Joseph Aloysius, 670 Roosevelt Dr.

PROSPECT 06712

1974 DeNicola, Michael, Union City Rd.
1928 Santoro, Grace Marie, P. O. Box 7122
1975 Villa, Alberto, Rt. 69

SEYMOUR 06483

1962 Deduk, Nancy Turner, 17 Westerman Ave.
1962 Deduk, Valentine John, 17 Westerman Ave.
1960 Donnelly, June F., 30 Garden
1970 Harvey, Edward Regis, Jr., 62 Main
1948 Longo, Vincent Francis, 161 Main
1934 Rogol, Oscar, 30 Garden

SOUTHBURY 06488

1955 Bernanke, Max, 595A Heritage Village
1937 Craighill, Margaret D., 538B, Cond. #14 Heritage Village
1975 Elcaness, Harold, 4B Court, Heritage Village
1972 Forbes, J. Dexter, P.O. Box 50
1975 Harrison, Stanley Leonard, 1036A Heritage Village
1954 Hart, Henry Harper, Oakledge
1927 Jackson, Arthur Hartt, 68A Hill-Place Dr., Heritage Village
1941 Lee, John Ranks, Heritage Village
1971 Mickenberg, Ira D., P.O. Box 446
1959 Raphael, Martha Carola, Main
1974 Rothstein, David, 912A Heritage Village
1970 Taylor, Marc Jules, P.O. Box 446
1955 VanDerwerker, Earl Edward, Jr., Union Square Prof. Offices
1974 Wheeler, Maynard Cattron, Box 425
1935 Yannet, Herman, 523-B Heritage Village

SOUTH MERIDEN 06450

1955 Klein, Bernard, 244 Main

WALLINGFORD 06492

1973 Arnold, Philip Bruno, Gaylord Hospital
1947 Boyd, Robert Booth, 91 South Main
1949 Breck, Richard William, 26 Fair
1966 Cirmo, William Francis, 50 South Main
1966 Combs, Jerome Thomas, 50 South Main
1942 Ferguson, James Fulton, Jr., 91 South Main
1956 Fraknoi, Joseph, 101 South Main
1967 Gates, William Leonard, 80 South Main
1972 Guzman, Pablo Soriano, Gaylord Hospital
1952 Hines, Thomas Franklin, Gaylord Hospital
1974 Hofbauer, Henry B., 26 Fair
1975 Kellan, Carl, 50 S. Main
1964 Kramer, Bernard, 604 Center
1974 Krc, Eugen, 153 South Main
1974 Manchepalli, Anandarama Setty A., Gaylord Hospital
1976 Maningas, Antonia Lorenzo, 487 North Main
1947 McGaughey, James David, III, 44 Morningside Ter.
1972 Norton, William S., The Choate School
1960 Piccirillo, Anthony Vincent, 50 South Main
1956 Plakins, Harold Gregory, 245 North Main
1960 Rathey, Ulrich Klaus, Masonic Home and Hospital
1953 St. James, Alfred Thomas, 181 North Main
1956 Sawicki, Lucian Alex, 153 South Main
1961 Smith, Delbert Beidler, 50 South Main
1931 Spignesi, John Theodore, 393 Center
1974 Strazek, Leslaw M., 1 Signal Hill Rd.

WATERBURY

1961 Abrahamian, H. Arto, 1389 West Main 06708
1975 Abrams, Raymond M., St. Mary's Hospital 06702
1971 Amatruda, Thomas T., Jr., Waterbury Hospital 06720
1962 Anderson, Duane Roland, 714 Chase Pkwy. 06708
1972 Anderson, Gerald G., 64 Robbins 06708
1973 Anthony, Joseph Robert, 56 Franklin 06702
1976 Archer, Girvice W., Jr., 1389 West Main 06708
1954 Audet, Charles Henry, Jr., 3 Second Ave. 06710
1954 Audet, Robert Joseph, 3 Second Ave. 06710
1942 Backhus, Louis Charles, 58 Central Ave. 06702
1974 Baldori, Victoriano Castillo, Jr., 1389 West Main 06708
1976 Beauchamp, Lawrence Arthur, 89 Willow 06710
1953 Beeble, John, 578 Watertown Ave. 06708
1974 Berg, Gerald, Waterbury Hospital 06720
1960 Bisson, Bertrand Philip, St. Mary's Hospital 06702
1931 Bizzozero, Orpheus Joseph, 134 Grandview Ave. 06708
1968 Bizzozero, O. Joseph, Jr., 134 Grandview Ave. 06708
1970 Blain, Claude Andre, 714 Chase Pkwy. 06708
1950 Blank, Samuel, 951 Chase Pkwy. 06708
1972 Bobowick, Alphonse Roger, 134 Grandview Ave. 06078
1970 Bonaccorsi, Benito Italo, 635 Highland Ave. 06708
1943 Bonner, Robert Alexander, Jr., 1389 West Main 06708
1972 Brackett, John William, Jr., St. Mary's Hospital 06702
1964 Buckley, Michael Bernard, 1100 Baldwin 06706
1937 Burnham, Bernard Alfred, 1389 West Main 06708
1958 Cappelletti A. Joseph, 134 Grandview Ave. 06708
1970 Chavez, Aldo Edmundo, Waterbury Hospital 06720
1962 Cohen, William, 475 Chase Parkway 06708
1942 Coppeto, C. James, 220 East Main 06702
1942 Coshak, Morris, 58 Holmes Ave. 06710
1928 Cottiero, Thomas, P.O. Box 1150 06720
1947 Cox, Marcus Edward, St. Mary's Hospital 06702
1964 Cutler, Henry Julius, 134 Grandview Ave. 06708
1969 Daly, Joseph Edmund, 1389 West Main 06708
1961 D'Angelo, Daniel A., 636 Plank Rd. 06705
1972 Daniels, Darrell S., 163 Grove 06710
1976 Danielson, Kenneth Sigwald, 1211 West Main 06708
1951 Davie, Robert N., 1211 West Main 06708
1972 de Escobar, Decio Macedo, 29 Central Ave. 06702
1956 Dennen, Philip Cushing, 134 Grandview Ave. 06708
1963 De Petrillo, Bart, 134 Grandview Ave. 06708
1970 Diggs, Andrew Monroe, 106 Grove 06710
1948 DiLorenzo, Salvatore F., 65 Pine 06710
1953 Dingman, Peter Van Cleef, 1211 West Main 06708
1964 Dudzic, Anthony Luke, 1389 West Main 06708
1974 Dunn, Edward, Waterbury Hospital 06720
1972 Dyer, Richard H., Jr., 1211 West Main 06708
1975 Eguia, Jose M., 95 Union 06702
1970 Eisen, Steven L., 1211 West Main 06708
1964 Eslami, Mehdi Saghatol, 1389 West Main 06708
1967 Favata, John, 1389 West Main 06708
1974 Feldman, Robert Allen, 1211 Main 06708
1972 Ferraro, Robert William, 636 Plank Rd. East 06705
1937 Finkelstein, William, 195 Grove 06710
1926 Finn, Alfred Joseph, 534 Willow 06710
1975 Finn, James Edward, 1211 West Main 06708
1974 Fischbein, Charles Alan, 1389 West Main 06708
1964 Fisher, William H., Jr., 1211 West Main 06708
1973 Flint, James Foreman, 134 Grandview Ave. 06708
1927 Foster, John Hess, 170 Hillside Ave. 06710
1952 Francis, Henry Lloyd, 53 Central Ave. 06702
1976 Fuller, Leo Gladstone Anthony, St. Mary's Hospital 06702
1959 Gaines, Gail Allyn, 72 Hale 06708
1951 Gedeon, Philip Elias, 301 Highland Ave. 06708
1974 Getnick, Richard Alan, 1211 West Main 06708
1975 Gibney, Raymond A., 82 South Elm 06702
1963 Gilbert, Roger Key, Waterbury Hospital 06720
1975 Glassman, Robert Martin, 1389 West Main 06708
1976 Goco, Evelina S., 1389 West Main 06708
1951 Good, Philip Snowden, 714 Chase Pkwy. 06708
1949 Good, Robert Childers, 714 Chase Pkwy. 06708
1974 Greenberg, Irwin M., Waterbury Hospital 06720
1947 Gualtieri, Michael Vincent, 27 Cooke 06702
1942 Harty, John E., 1389 West Main 06708
1967 Helvie, Henry Eaton, Waterbury Hospital 06720
1930 Herrmann, Albert Edward, 142 Robinwood Rd. 06708
1976 Hersh, Stanley Blair, 1389 West Main 06708
1931 Hetzel, Joseph Linn, 51 Central Ave. 06702
1974 Hoden, Peter David, 134 Grandview Ave. 06708
1967 Hogan, J. Michael, 72 Lakeside Boulevard West 06716
1953 Huber, Herman Crane, Jr., 29 Cliff 06710
1942 Jennes, Milton Leo, 1389 West Main 06708
1975 Jenusaitis, John Robert, 52 Central Ave. 06702
1956 Karsh, Jamil A., 134 Grandview Ave. 06708
1951 Keet, John Eugene, Southwest Rd. 06708
1966 Keggi, Kristaps Juris, 1211 West Main 06708
1974 Kiley, Richard Joseph, 1389 West Main 06708
1944 Koleshko, Lawrence Jacob, 1022 Bunker Hill Ave. 06708
1971 Kostecki, Richard Joseph, 1211 West Main 06708
1974 Kraus, Paul Aaron, 1211 West Main 06708
1940 LaBrecque, Frederick Charles, 151 Grove 06710
1976 Lande, Saul, Waterbury Hospital 06720
1954 Larkin, Charles Lewis, Jr., 1039 Chase Pkwy. 06708
1974 Lee, Kinson, Waterbury Hospital 06720
1976 Lehman, Robert Michael, 56 Franklin 06702
1945 Lenkowski, William John, 207 South Elm 06702
1974 Lesser, Robert L., 1389 West Main 06708
1941 Lewicki, Edward Stanley, 858 North Main 06702
1971 Loyer, Richard Edward, 1211 West Main 06708
1954 Luria, Sidney Bennett, 134 Grandview Ave. 06708

1976 Lyons, Kathleen Hausmann, Waterbury Hospital 06720
1972 Manes, Peter Rolf, 1389 West Main 06708
1939 Margolius, Norman Calvin, 1 Eastfield Rd. 06708
1975 Mari, Eduardo Guillermo, 60 Linden 06702
1948 Marino, Rocco Serefin, 77 Briarcliff Ave. 06708
1971 Marjani, Massoud A., 134 Grandview Ave. 06708
1968 Mascoli, Nicholas Michael, Jr., 1389 West Main 06708
1969 Matyszewski, Stanley Eugene, 64 Robbins 06708
1941 Mayo, Elliott Russell, 129 Prospect 06702
1943 Meo, Richard Carl, 18 Cliff 06710
1941 Merriman, Henry, 134 Grandview Ave. 06708
1973 Mirrer, Eugene, 714 Chase Pkwy. 06708
1947 Monagan, Thomas M., 1389 West Main 06708
1956 Moore, Edwin Jude Thaddeus, 89 Roseland Ave. 06710
1975 Moynahan, Paula Amelia, 150 Bateswood Rd. 06706
1947 Mulligan, Thomas Michael, 30 West Main 06702
1960 Nanni, Fernando Peter, 150 Prospect 06702
1974 Nejad, Iradj F., 134 Grandview Ave. 06708
1969 Nejame, Franklin Francis, 72 Lakeside Boulevard West 06708
1976 Newman, Richard Joseph, 185 Grove 06710
1966 Nezhad, F. Manouchehr, 134 Grandview Ave. 06708
1975 Niebel, Kenneth G., 1389 West Main 06708
1976 Noble, Rosemarie, 1389 West Main 06708
1959 Nunes, Manuel, 10 Second Ave. 06710
1952 O'Brien, Francis Hefler, 1211 West Main 06708
1948 Olore, Louis, 47 Prospect 06702
1975 Osborn, Dana John, 134 Grandview Ave. 06708
1969 Ostrov, Melvyn R., 475 Chase Pkwy. 06708
1942 Pasetto, Edo, 1183 Hamilton Ave. 06706
1975 Peterson, Walter Scott, 134 Grandview Ave. 06708
1970 Piscatelli, Robert Louis, St. Mary's Hospital 06702
1975 Posada, Humberto, 95 Union 06702
1975 Poupko, Gary G., 34 Collins 06704
1975 Preston, Nicholas, 134 Grandview Ave. 06708
1974 Querijero, Gerardo Barcenas, 1389 West Main 06708
1968 Quigley, William Frederick, 195 Grove 06702
1974 Ranish, Melvin, 475 Chase Parkway 06708
1964 Reed, David Pardee, 1389 West Main 06708
1941 Reichenbach, Alfred Edelbert, 134 Grandview Ave. 06708
1975 Renda, Joseph L., 134 Grandview Ave. 06708
1939 Reynolds, Joseph Alban, 54 Central Ave. 06702
1974 Richards, Norman R., 335 Meriden Rd. 06705
1971 Robitaille, George A., 56 Franklin 06702
1974 Romero, Roberto Orduna, 450 Meriden Rd. 06705
1974 Rost, Dwight Murray, Waterbury Hospital 06720
1958 Rosenbaum, Haskell M., 1389 West Main 06708
1976 Rosenberg, Barry Steven, 1389 West Main 06708
1974 Rozycki, Jan S., 67 Central Ave. 06702
1975 Rubenstein, Stephen Robert, 192A Kaynor Dr. 06708
1925 Ruby, Max H., 170 Hillside Ave., 06710
1939 Ruby, Robert J., 170 Hillside Ave., 06710
1975 Ruszkowski, Ronald Joseph, 134 Grandview Ave. 06708
1970 Sangree, Milton Huyett, Jr., Waterbury Hospital 06720
1954 Santopietro, Olindo Oreste, 714 Chase Pkwy. 06708
1939 Sayers, Daniel O'Connell, 132 Eastfield Rd. 06708
1964 Segall, Edward Marvin, 195 Grove 06710
1975 Seliger, Gustav, 82 South Elm 06702
1974 Shapiro, Michael Mark, 63 Central Ave. 06702
1971 Sharian, Kent Edward, 1389 West Main 06708
1933 Shea, Vincent Timothy, 20 East Main 06702
1972 Shea, Vincent Timothy, Jr., 95 Union 06702
1960 Shealy, A. Craig, 1039 Chase Parkway 06708
1948 Shearer, John Kennedy, 1211 West Main 06708
1972 Sherman, Joel Avery, 195 Grove 06710
1958 Sirica, Alphonse Eugene, 185 Columbia Blvd. 06710
1965 Sirop, Paul Arthur, 195 Grove 06710
1941 Sklaver, Joseph, 95 North Main 06702
1946 Smith, Jasper Archer, 134 Grandview Ave. 06708
1955 Standard, John Edward, 1211 West Main 06708
1975 Sterling, Anthony Paul, 636 Plank Rd. 06705
1954 Stocking, Anson Gilbert, 30 West Main 06702
1952 Sturman, Robert Harris, 1211 West Main 06708
1946 Sullivan, Arthur Francis, 493 Willow 06710
1973 Sullivan, Raymond Eugene, 1211 West Main 06708
1964 Summa, John Francis, 134 Grandview Ave. 06708

1975 Taube, Steven Lawrence, 64 Robbins 06708
1975 Teeking, Plaridel Sta. Teresa, 1389 West Main 06708
1947 Teiger, Paul, 1389 West Main 06708
1971 Thornton, George Fred, Waterbury Hospital 06720
1972 Toffler, Robert B., Waterbury Hospital 06720
1960 Tormo, Vicente, 1389 West Main 06708
1966 Traurig, Allen Robert, 1211 West Main 06708

1960 Valentine, George William, 1389 West Main 06708
1958 Veiga, Adriano Seabra, 1389 West Main 06708
1975 Villaluz, Erlinda, Santos, 72 Lakeside Blvd. W. 06708
1974 Villaluz, Jose Reallista, Jr., 54 Central Ave. 06702
1975 Villar, Romulo Loyola, 1389 West Main 06708
1970 Vincitorio, Joseph Alexander, 95 Union 06702
1975 Waldman, Nancy, 134 Grandview Ave. 06708

1942 Wallach, Gert M.K., Dir. of Health, City of Waterbury 06720
1959 Warren, Philip, 1389 West Main 06708
1954 Weisberg, Herbert Edward, 63 Central Ave. 06702
1966 Wihbey, Joseph George, 134 Grandview Ave 06708
1975 Winograd, Jeffrey, 82 South Elm 06702
1956 Wohlgemuth, Paul Robert, 1211 West Main 06708

1949 Yavetz, Louis Milton, 134 Grandview Ave. 06708
1975 Youngberg, Arne S., 134 Grandview Ave. 06708

1968 Zucker, Leon, 34 Prospect 06702

WEST HAVEN 06516

1975 Beck, John Edwin, 400 Morgan La.
1958 Brodoff, Murray, 385 Main
1938 Chasnoff, John Arthur, 328 Main
1943 Cozzolino, Eugene Norris, 640 Savin Ave.
1958 Day, Edward John, 609 Savin Ave.
1976 De Jesus, Cesar P. V., Veterans Administration Hospital
1954 deSuto-Nagy, Gyula I., Veterans Administration Hospital
1951 Dzubaty, Michael, 522 Ocean Ave.
1974 Errera, Paul, Chief Psychiatry Service, Veteran's Administration Hospital
1976 Goubran, Michael, 377 Main
1930 Harris, Benedict Richard, % Sound View Specialized Care Center
1971 Hourihane, Mortimer John, 385 Main
1960 Hurowitz, Robert Boyd, 285 Main
1966 Job, Gil Guion, 32 Priscilla Rd. 06515
1959 Keohane, Mary Frances, Veterans Administration Hospital
1972 Kerstein, Morris Daniel, Veterans Administration Hospital
1967 Kinstlinger, Robert, 385 Main
1975 Liebowitz, Meyer, 287 Main
1965 Loh, Hsing Cheng, Veterans Administration Hospital
1974 Lyons, William Bernard, Veterans Administration Hospital
1975 Mestal, Rudolph, 178 Elm 06516

1930 Milano, Nicolas Antonio, 271 Elm
1947 Milici, John Joseph, 354 Campbell Ave.
1976 Nocks, James Jay, Veterans Administration Hospital 06516
1965 Rightmyer, Eugene Robert, 8 Bailey Dr.
1962 Rocco, Anthony Rudolf, 415 Main
1955 Tierney, Lawrence Matthew, 246 Elm
1947 Yesner, Raymond, Veterans Administration Hospital

WOLCOTT 06716

1940 Damiani, Rudolph Andrea, Rose Hill
1928 Morrill, Harold Frost, 133 Wolcott Rd.
1957 Rofrano, Douglas Anthony, 30 Beach Rd.
1973 Walshe, Thomes Eric, 509 Wolcott Rd.
1946 Whalley, Evan Joseph, 76 Pratt Lane

WOODBRIDGE 06525

1961 Bradley, Raymond Edgar, Jr., 20 Center View Rd.
1948 Brockway, Dorothy W., Old Mill Rd.
1967 Clark, Henry Toole, Jr., 36 Indian Trail
1969 Erba, S. Michael, 1061 Johnson Rd.
1951 Fuhrmann, Josephine Marie, North Pease Rd.
1967 Goffinet, Sara Beatty, 17 Deepwood Rd.
1958 Herbordt, W. Alexander, 30 Orchard Rd.
1949 Keller, Florence, 264 Amity Rd.
1975 Kligfeld, Michael, 8 Old Still Rd.
1952 Lidz, Ruth Wilmanns, Orchard Rd.
1925 Maurer, Lloyd Leslie, Fairgrounds Rd.
1973 Milano, Ann F., 26 Dillon Rd.
1935 Newman, Richard, Old Racebrook Rd.
1947 Root, James Harold, Jr., P.O. Box 3907
1946 Taffel, Max, Seymour Rd.
1954 Treder, Frederick Henry, Center Rd.

WOODMONT 06465

1912 Goldman, George, 195 Kings Highway

YALESVILLE 06494

1954 Dickinson, William Wells, 63 Hill Ave.

OUT OF COUNTY

1957 Anderson, Harold Clifford, Syntex Corp., 3401 Hillview Ave., Palo Alto, California 94304
1961 Atoynatan, H. Tanash, 317 North Main, Manchester 06043
1961 Bensch, Klaus G., Stanford Un. School Med., Stanford, California 94305
1961 Benton, Philip Eglin, Box 241, Barley Neck Rd., Orleans, Massachusetts 02653
1963 Berte, John Bernard, Huron Road Hospital, Cleveland, Ohio 44112
1939 Bishop, Courtney Craig, Gilfeather Farm, Wardsboro, Vermont 05355
1927 Blodinger, Israel Edward, 2121 N. Ocean Blvd., Boca Raton, Florida 33432
1965 Bohan, Gunar N., Dekalb Cty Health Dept., Decatur, Georgia 30033
1952 Bondy, Philip Kramer, The Royal Marsden Hosp., London SW3, England
1956 Bradley, William Richards, One American Row, Hartford 06115
1961 Brigham, John Charles, 17 Johnson Ave., Hudson, Massachusetts 01749
1958 Cary, James Martin, 181 East Cedar, Newington 06111
1946 Clarke, Winthrop Irving, 141 Sea Isle Circle, South Daytona, Florida 32019
1935 Collins, Joseph Osborn, 326 Woodbury Rd., Watertown 06795
1943 Curtis, William Boyd, 108 N. Gordon Rd., Fort Lauderdale, Florida 33301
1956 Czarsty, Joseph Charles, 314 Main, Oakville 06779
1939 Davis, Jachin Boaz, 147 East Valley, Abingdon, Virginia 24210
1948 Devenis, Michael M., 303 California Ave., Santa Monica, California 90403
1960 Fanslow, Allen Woodward, 31 Bridgeview Pl., Stratford 06497
1953 Fierman, Louis B., 25 Marlborough, Portland 06480
1926 Fitzpatrick, Edward Earl, 317 36th Ave., N. E., St. Petersburg, Florida 33704
1966 Hellman, Samuel, Joint Center for Radiation Therapy, Boston, Mass. 02115
1930 Higgins, Joseph John, 1365 Enfield, Enfield 06082
1946 Howard, Weaver Oscar, 195 Parkview Ter., East Orange, New Jersey 07050
1971 Hurst, Victor Waldemar, III, Shag Bark La., Woodbury 06798
1955 Jaeger, Carl Alphonse, 4 Dearfield Dr., Greenwich 06832
1975 Klingler, Stephen York, 12 Knoll Rd., Woodbury 06798
1936 Klumpp, Theodore George, 90 Park Ave., New York, N. Y. 10016
1975 Knobelman, Richard A., 66 York, York, Maine 03909
1946 Kunkel, Paul, 30 Hospital Ave., Danbury 06810
1971 Langner, Joseph Morton, 201 Main, Southington 06489
1915 Lear, Maxwell, 2840 South Country Rd., Palm Beach, Florida 33480
1943 Lencz, Erwin D., 1500 Bay Rd., Miami Beach, Florida 33139
1955 Licht, Sidney, 4601 Univ. Dr., Coral Gables, Florida 33146
1963 Marsh, Catherine Ohlandt, 181 Westmont, West Hartford 06117
1962 Marsh, Spinks Hamilton, 85 Jefferson, Hartford 06106
1955 Martin, Waldo Emerson, 507A Iroquois La., Stratford 06497
1934 Mekrut, Joseph Anthony, 1506 Danbury Dr., Sun City Center, Florida 33570
1973 Milano, Madelyn Frances, 19 Hurd Bridge Rd., Clinton 06413
1958 Mooney, James Patrick, Philips Medical Systems, Inc,. Shelton 06484
1960 Morrissey, Vincent J., 6 Bluewater La., Westport 06880
1958 Opsahl, Jeanette C., Sheraton Plaza, Boston, Mass. 02116
1921 Otis, Fessendon Newport, 21 Guernsey Rd., Bloomfield 06002
1968 Ozenberger, James Milton, Boston Post Rd., (18 West Main) Clinton 06413
1971 Palm, Carlton Robert, 30 Peck Rd., Torrington 06790
1968 Pascale, Jane Fay, 108 Chasewood Lane, East Amherst, New York 14051
1946 Pasternak, Maxwell, 2425 Gulf of Mexico Dr., Sarasota, Florida 33577
1940 Pelz, Kurt S., 16 Sol's Point Rd., Clinton 06413
1952 Pious, William Leon, 715 San Jaun, Clewiston, Fla. 33440
1973 Riemer, Hans Otto, Laurel Heights Hospital, Shelton 06484
1960 Rinaudo, Peter A., 59 Skyview Dr., Berlin 06037
1949 Riordan, William Darling, 40 Braeburn Rd., West Hartford 06117
1966 Roach, Donald Patrick, 408 Howe Ave., Shelton 06484

1973 Ross, Stephen Addison, Belfast Rd., Camden, Maine 04843
1931 Sandulli, Gaetano Renato, 212 Middlebury Rd., Watertown 06795
1972 Sherwin, Carl P., Jr., Fafnir Bearing Co., New Britain 06053
1951 Spencer, Leon O., 410 42nd Ave. North, Myrtle Beach, South Carolina 09577
1924 Stettbacher, Henry John, 906 Locust, Cambridge, Maryland 21613
1923 Sullivan, Thomas Joseph, 2500 S. Ocean Blvd., Boca Raton, Florida 33432
1954 Vileisis, Vita, Ben Sherman Hill, Woodbury 06798
1974 Zilveti, Carlos B., Regional Med. Officer, Amer. Embassy, Bogota, Columbia
1933 Zimmerman, Harry Martin, Montefiore Hospital, Bronx, New York 10467

New London County Association

President: Clifford E. Wilson, 12 Case St., Norwich 06360
Vice-President: Fred A. Anderson, 7 Clinic Dr., Norwich 06360
Secretary-Treasurer: Kathryn E. Verie, 159 Ocean Ave. New London 06320
Councilor: Charles M. Krinsky, 27 Broad, New London 06320
Associate Councilor: Frederick C. Barrett, 108 New London Tpke., Norwich 06360

Annual Meeting, First Thursday in April
Semi-Annual Meeting, First Thursday in October

COLCHESTER 06415

1956 Conrad, Carl Caspar, 24 Norwich Ave.

GALES FERRY 06335

1971 Engelke, Harold August, Medical Arts Building, R. F. D. No. 12
1974 Long, Dennis Sage, R.F.D. 3, Box 309

GRISWOLD

Jewett City 06351

1956 Gosselin, Albert George, 65 Brown Ave.

GROTON

1975 Barri, Anthony R., 317 Long Hill Rd. 06340
1955 Brown, Walter McKeand, 295 Long Hill Rd. 06340
1953 Force, Berwyn Rodney, 272 Thames 06343
1975 Heller, Stephen Frederick, 167 Broad 06340
1970 Hollister, James Malcolm, 167 Broad 06340
1946 MacDougall, A. Duncan, 174 Bridge 06343
1976 Palker, Neil A., 244 Shennecosset Pkwy. 06340
1961 Soriano, Ernesto Reyes, 1064 Poquonnock Rd. 06340
1944 Sutton, Paul, 174 Bridge 06340

HADLYME 06439

1933 Wilson, George Campbell, Box 98

EAST LYME 06333

1970 Edgar, Edward, E., Black Oak Dr.

LYME

1927 Ely, Julian Griffin, R. F. D. No. 2 06371
1975 Stanberry, Mark Chauncy, Joshua Lane, RFD 2

MYSTIC 06355

1967 Barry, Richard M., Sandy Hollow Rd.
1974 Brensilver, Howard L., Sandy Hollow Rd.
1950 Edmonstone, William Mason, 102 Library
1961 Graham, Roger A., 761 River Rd.
1975 Plankeel, John P., 66 Hill Top Rd.
1975 Pukay, Boris, 21 East Main
1973 Schmidt, James Lee, Box 38
1968 Sproul, Lyman Edwin, Sandy Hollow Rd.

NIANTIC 06357

1975 Barrera, Alberto M., 5D Churchwood
1972 Glasser, Samuel Thomas, 4 Columbus Ave.
1951 Hall, Mary Nettleton, 88 Smith
1954 Kramm, William Amede, Hope
1972 Young, Daniel David, 22 Pennsylvania Ave.

NEW LONDON 06320

1970 Adams, Gene Roger, 276 Montauk Ave.
1956 Beatman, Bernard, 34 Channing
1933 Becker, Joseph, 302 State
1957 Bedrick, Morton, 345 Montauk Ave.
1963 Bobruff, Jerome, 268 Montauk Ave.
1933 Brosnan, John Francis, 293 Montauk Ave.
1971 Brown, Henry, 350 Montauk Ave.
1969 Burton, George, 488 Montauk Ave.
1960 Cavicke, David Conrad, 350 Montauk Ave.
1974 Chheda, Jyostna, R., Lawrence & Memorial Hospitals
1970 Clayton, Edwin Martin, Lawrence & Memorial Hospitals
1961 Cooper, Donald Wesley, 350 Montauk Ave.
1958 Coulson, Louis Anthony, 425 Montauk Ave.
1972 Derby, James Hart, 41 Faire Harbour Pl.
1949 Dey, Frederick Lemuel, 464 Ocean Ave.
1974 Dickson, Harrison McCrea, U.S. Coast Guard Academy Hospital
1931 Dyer, Charles Edward, 297 Montauk Ave.
1954 Dyer, Charles Frederick, 327 Montauk Ave.
1948 Ellison, Malcolm Mitchell, 328 Montauk Ave.
1947 Fagan, Frederick J., 19 Glenwood Ave.
1964 Fleisher, Paul Robert, 435 Montauk Ave.
1965 Foss, Beverly Ann, 325 Montauk Ave.
1958 Fulchiero, Egidio, Lawrence & Memorial Hospitals
1966 Gaito, Raymond Arthur, 464 Ocean Ave.
1954 Gerity, Paul Joseph, 465 Montauk Ave.
1971 German, John Nixon, 350 Montauk Ave.
1934 Gipstein, Edward, 181 Broad
1947 Haines, Henry Lippincott, 464 Ocean
1939 Hartman, Frederick Brittinger, 342 Montauk Ave.
1958 Hayes, David, Lawrence & Memorial Hospitals
1934 Henkle, Robert Theodore, 132 Ocean Ave.
1965 Hostnik, William John, 280 Montauk Ave.
1974 Immordino, Peter Anthony. 154 Broad
1936 Irwin, Harold Hyman, 158 Williams
1970 Jackson, Daniel Leslie, 276 Montauk Ave.
1966 Johnson, Howard King, Jr., 488 Montauk Ave.
1966 Johnson, Mary Ellen, 488 Montauk Ave.
1956 Jones, William Nicholas, 41 Faire Harbour Pl.
1974 Jung, Robert Marc, 41 Faire Harbour Pl.
1961 Kaplan, Donald H., 345 Montauk Ave.
1962 Karno, Martin Louis, 270 Montauk Ave.
1972 Kim, C. Albert. Lawrence & Memorial Hospitals
1972 Klimek, Robert J., 154 Broad
1940 Krinsky, Charles Morris, 27 Broad
1958 Kuhn, Herbert Ray, 425 Montauk Ave.
1975 Kwee, Hing Sin, Lawrence & Memorial Hospitals
1962 Leib, Dorothy Baird, 429 Montauk Ave.
1962 Leib, Gilbert Middleton Patten, 447 Montauk Ave.
1953 Lena, Hugh F., Jr., 154 Broad
1947 Loiacono, Richard A., 464 Ocean Ave.

1953 Longo, Vincent Joseph, 437 Montauk Ave.
1936 Lubchansky, Jacob Harris, 27 Broad
1970 Marchand, Gilles Alfred, 425 Montauk Ave.
1957 Mariani, Roland A., 280 Montauk Ave.
1968 Marshall, David Charles, 154 Broad
1964 Marx, Frank George, 425 Montauk Ave.
1949 McFarland, Ward John, 833 Ocean Ave.
1976 McKeehan, Frederick Romer, Conn. College
1970 Mensch, Arthur H., Lawrence & Memorial Hospitals
1968 Moalli, Daniel Edward, 350 Montauk Ave.
1964 Molloy, Peter Myers, Lawrence & Memorial Hospitals
1966 Morse, Willard Jackson, Jr., 391 Ocean Ave.
1974 Murphy, Arthur Gordon, Connecticut College
1952 Murray, Joseph Thomas, 342 Montauk Ave.
1953 Murray, William John, Jr., 447 Montauk Ave.
1946 Nielsen, Tage M., 425 Montauk Ave.
1951 Olsen, Robert Clarence, 496 Montauk Ave.
1963 Palmer, Walter M., 325 State
1973 Pascual, Rafael S., 391 Ocean Ave.
1976 Pembrook, Richard Charles, 464 Ocean Ave.
1963 Peterson, David M., 342 Montauk Ave.
1955 Prokesch, Clemens Elias, 435 Montauk Ave.
1968 Robinson, Charles H., Jr., 276 Montauk Ave.
1974 Roe, Charles Francis, 365 Montauk Ave.
1975 Rosenblum, Robert Alan, 345 Montauk
1952 Saxe, Louis Phillip, 341 Montauk Ave.
1973 Schmidt, C. William, 350 Montauk Ave.
1960 Scholz, Horst Dieter, Lawrence & Memorial Hospitals
1975 Silver, Stephen Euric, 271 Montauk Ave.
1949 Spitz, Hilliard, 447 Montauk Ave.
1971 Sprafke, Donald Francis, 41 Faire Harbour Pl.
1965 Sprecace, George Alcide, 248 Montauk Ave.
1974 Stein, Sigmund Charles, 276 Montauk Ave.
1940 Sulman, Morris, 203 Montauk Ave.
1974 Sutphen, John Hayes, Lawrence & Memorial Hosp.
1933 Taylor, Robert Nelson, 159 State
1963 Tighe, John Anthony, 419 Montauk Ave.
1951 van Dyk, Arnulf R., 50 Granite
1947 Verie, Kathryn E., 159 Ocean Ave.
1960 Wade, Philip Barry, 275 Montauk Ave.
1950 Warnshuis, Lilian Cook, 25 Thames
1935 Wies, Carl Hendricks, 115 Huntington
1951 Wood, Dwight Reynolds, 358 Montauk Ave. 06320
1947 Wool, Joseph M., 271 Montauk Ave.
1972 Yoselevsky, Melvin Arnold, 334 Montauk Ave.

NOANK 06340

1974 Andrews, William Baird, 107 Seneca Dr.

NORWICH 06360

1974 Ahamed, Sultan, 57 Lafayette
1946 Albamonti, Mario John, 6 Clinic Dr.
1950 Allen, Joseph Eugene, 11 Woodrow Ave.
1950 Anderson, Fred Andrew, 7 Clinic Dr.
1950 Anderson, Ruth Messer, 15 Butternut Dr.
1967 Andrews, Ralph Colvin, 16 Franklin
1933 Archambault, Henry Allard, 120 Lafayette
1959 Balfour, James Douglas, William W. Backus Hospital
1950 Barrett, Frederick Charles, 108 New London Tpke.
1969 Bergendahl, Gilbert Thomas, 120 Lafayette
1935 Bergendahl, Harold Andrew, 120 Lafayette
1973 Betten, Michael Gerald, 12 Case
1942 Bielecki, Casimer Eugene, 120 Lafayette
1962 Browning, S. Pearce, III, 5 Case
1959 Carter, Frank James, 120 Lafayette
1959 Carter, Marie Kernan, 185 Broadway
1965 Coletti, Larry, 108 New London Tpke.
1964 Cook, Thomas Jackson, 57 Lafayette
1960 Costa, Pasquale James, 108 New London Tpke.
1966 Cranston, Robert W., Jr., 43 Ox Hill Rd.
1974 de Groot, Theodore J., 53 Lafayette
1942 Drobnes, Sidney, 24 Sachem
1956 Eadie, Frederick Stearns, 120 Lafayette
1969 Edgar, Malcolm S., Jr., 2 Clinic Dr.
1975 Esfahanian, Sa-id, 326 Washington
1974 Gilmartin, Daniel, William W. Backus Hospital
1958 Glenney, Christopher Courtney, 2 Clinic Dr.
1975 Goldblatt, Jeffrey Stuart, 121 Lafayette
1966 Greene, Leonard Albert, 120 Lafayette
1962 Griffin, J. Clement, 12 Case
1948 Guss, Louis, 59 Sachem
1935 Higgins, Harold William, 7 Clinic Dr.
1962 Joseph, Julien L., Scotland Rd., R. F. D.
1971 Kadish, Joan Alice, William Backus Hospital
1971 Kadish, Manuel Edgar, Brown School Rd., R. F. D. No. 3
1960 Kalams, Zannis Spiros, 12 Case
1974 Kantharaj, Adisayam Joseph, 35 Lafayette
1947 Katz, Morris E., 108 New London Tpke.
1954 Kelleher, James H., 100 Fanning Ave.
1946 Kelley, Winfield Orthello, 11 Butternut Dr.
1967 Kerrigan, Robert, 87 Lafayette
1962 Kropp, Peter Johann, 24 Sachem
1966 Langhammer, Hans, Norwich State Hospital
1947 LaPierre, Arnaud Rogers, 5 Clinic Dr.
1949 LaPierre, Warren Winthrop, 5 Clinic Dr.
1974 Lee, Woong B., 57 Lafayette
1974 Lesnik, Thomas H., 119 Lafayette
1950 Lord, Benjamin John, Jr., 120 Lafayette
1936 Mahoney, Joseph John, 120 Lafayette
1975 Mandell, Harvey N., 120 Lafayette
1954 Manning, Imogene Hopkins, 120 Lafayette
1947 Martin, John Edward, Clinic Dr.
1967 Martin, Morgan Graham, P. O. Box 508
1955 Masterson, Thomas Joseph, 2 Clinic Dr.
1967 McKeon, William Francis, 148 Sachem
1952 Milone, Joseph E., 16 Franklin
1951 Morrison, John Edward, 11 Lincoln Ave.
1935 O'Connell, Patrick Henry, 10 Shetucket
1959 O'Toole, Peadar, P. O. Box 508
1968 Parthenis, Alexander, Box 508
1947 Phillips, Nicholas T., 12 Case
1973 Powell, Bernardo, Norwich State Hospital
1972 Prioli, Katherine M., 108 New London Tpke.
1934 Quintiliani, Albert, 58 Broadway
1973 Rosenberg, Peter J., 159 Sachem
1948 Santiccioli, Aldo Bruno, 1-5 Sheraton Lane
1964 Saracino, Luigi, Norwich Hospital
1954 Sawyer, James David, 12 Case
1942 Schwarz, H. Peter, 120 Lafayette
1968 Sculco, Mario, 120 Lafayette
1935 Sears, Lewis, 257 Main
1938 Segel, Solam, 159 Sachem
1976 Snyder, Ronald Eugene, 108 New London Tpke.
1968 Solomon, Morton, Town at Washington
1966 Songco, Mariano, F., 16 Franklin
1974 Springer, Gerald L., 326 Washington
1929 Suplicki, John William, 257 Main
1968 Taylor, K. Stephens, 57 Lafayette
1963 Torres, Clemencio Bautista, 12 Case
1963 Tramontozzi, Anthony Daniel, 108 New London Tpke.
1976 Wahba, Hany Said, 12 Case
1955 Ward, Franklyn Pennington, 117 Lafayette
1976 Watson, James Earl, 159 Sachem
1932 Wener, William Victor, 287 Harland Rd.
1953 Wilson, Clifford Edward, 12 Case

NORWICHTOWN 06360

1954 Harkins, James Anthony, 98 Case

OLD LYME 06371

1971 Borger, Allen Paul, Old Cart Path
1963 Brubaker, Robert Erb, R.D. #3
1963 Dorantes, Joaquin, Saunders Hollow
1962 Friedmann, Karl R.
1973 Griswold, Matthew, P. O. Box 206
1967 Hackbarth, Clifford James, Boston Post Rd.

QUAKER HILL 06375

1970 Rablen, Elizabeth Charlotte, 40 Old Norwich Rd.
1929 Starr, Richard Mallory, 7 Best View Rd.

SALEM 06415

1971 Bender, Louis, 11 Pleasant View Rd., R.D. 3
1974 Bingham, David Brewster, White Birch Rd.

STONINGTON 06378

1975 Pitts, Norman E., R.F.D. #1, Box 69-D
1975 West, Edmund Anthony P., Box 266

TAFTVILLE 06380

1949 Rousseau, David George, 4 North Second Ave.

UNCASVILLE 06382

1949 Miselis, Frank Joseph, 221 Norwich-New London Tpke.
1929 Rasmussen, Hans Norman, 92 Depot Rd.

WATERFORD 06385

1962 Behringer, Frederick Rudolph, 14 Susan Ter.
1965 Ellis, Grace Davis, 214 Niantic River Rd.
1936 Ferguson, Helen Knox, 172 Niantic River Rd.
1969 Knirsch, Anthony K., 28 Shawandasee Rd.
1967 Rabinovitch, Peter I., 175 Boston Post Rd.
1974 Srinivas, Ratna Ragunath, 53 Colonial Dr.
1938 Woodward, Joseph Cutler, 254 Great Neck Rd.

OUT OF COUNTY

1972 Aromin, Salvador C., 24 Prospect, Moosup 06354
1951 Birchall, Ellen Frances, 1100 Holcomb, Watertown, New York 13601
1962 Corazzelli, Frank George, Jr., 60 Canterbury Lane, Trumbull 06611
1966 Cuello, Rafael A., Bridgeport Hospital, Bridgeport 06610
1941 Fowler, Roger N., 205 Heather La., Ramsey, New Jersey 07446
1968 Gilgore, Sheldon G., 9 Rockwell Lane, Darien 06820
1935 Hale, Virginia Anne, 6701 Ave. A, Apt. 1 Sarasota Florida 33581
1968 Harrison, Milton, 145 Pago Pago Dr., Naples, Florida 33940
1972 Jones, E. Arnold, Wildwood Medical Specialists, Essex 06426
1975 Lamb, Elizabeth S., 96 Norwood Rd., West Hartford 06117
1928 Mills, Bernard, Litchfield, Hawthornden State Hospital, Northfield, Ohio 44067
1937 Moore, Maurice R., P.O. Box 3046, Spring Hill, Florida 33512
1934 Morse, Willard Jackson, 452 Lighthouse Way, Box 306, Sanibel, Florida 33957
1961 Nelligan, David Joseph, Magna La., Westbrook 06498
1962 Olejnik, Waclaw, Undercliff M. H. Center, Meriden 06450
1921 Sussler, David, 210 Maple, Springfield, Massachusetts 01105
1965 Wierzbinski, Joseph Paul, 517 Laurel Ave., Menlo Park, California 94025

Tolland County Association

President: Ill L. Yoon, 115 Elm, Enfield 06082
Vice-President: Allyn B. Dambeck, 111 Hartford Tpke., Tolland 06084
Secretary-Treasurer: Marjorie A. Purnell, 23 Davis Ave., Rockville 06066
Councilor: Victor G. Sonnen, 59 Broad Brook Rd., Enfield 06082
Associate Councilor: Norman A. Zlotsky, 57 Union, Rockville 06066
Annual Meeting, Third Tuesday in March
Semi-Annual Meeting, Third Tuesday in October

ROCKVILLE 06066

1971 Abbott, Howard, 57 Union
1968 Adamo, Benjamin, 57 Union
1974 Arrieta, Edna Jovita M., Rockville General Hospital
1964 Atkins, Michael Patrick, 57 Union
1971 Brooks, Neil Hurst, 1 Ellington Ave.
1933 Burke, Francis Henry, P. O. Box 88
1974 Cook, Robert Stanley, Jr., 57 Union
1974 Dhandapani, Balasubramaniam, Tolland Professional Bldg. Route 30
1973 DiMeola, Herbert Joseph, 57 Union
1967 Erickson, George Carl, Lakeview Heights
1971 Haber, Melvin, Rockville General Hospital
1955 Josephson, Neil David, Rockville General Hospital
1955 Kristan, Joseph John, 57 Union
1970 Kriz, John Joseph, Rockville General Hospital
1950 Kummer, Seymour Isaac, 1 Ellington Ave.
1952 Purnell, Marjorie Axford, 23 Davis Ave.
1954 Purnell, Oliver James, 57 Union
1974 Reyes, Claireman Siozan, Rockville General Hospital
1931 Schneider, William, 72 Orchard
1972 Schwartz, Gerald Lee, 57 Union
1966 Sharon, Michael Reinhardt, 57 Union

SOMERS 06071

1941 Cullen, James Rescott, Hall Hill Rd.
1965 Maier, Robert Fritz, Main
1974 Whelan, John Joseph, 39 Hampden Rd.

STAFFORD SPRINGS 06076

1960 Amanti, Joseph Anthony, 89 East Main
1974 Chirot, Michel, Johnson Memorial Hospital
1964 DeTora, Albert M., 53 East Main
1974 Rodriguez, Josefina C., Star Rt., Box 5, 97 East
1975 Sawyer, C. Evans, Johnson Memorial Hospital

TOLLAND 06084

1958 Dambeck, Allyn Benard, 111 Hartford Tpke.
1969 Hunt, Malcolm L., 59 Crestwood Rd.

VERNON 06086

1969 Marmer, Ellen Lucille, 351 Merline Rd., P.O. Box 2340
1970 O'Connell, Charles George, Box 2278
1969 Shapiro, Harold O., 351 Merline Rd., P.O. Box 2340

OUT OF COUNTY

1965 Coyne, Edward Anthony, 565 Wolcott Hill Rd., Wethersfield 06109
1976 Ghazi-Saidi, Reza, 115 Elm, Enfield 06082
1957 Magauran, Brendan Gerard, 199 Maple, Enfield 06082
1960 Palomba, Edward Anthony, 535 Hazard Ave., Enfield 06082
1975 Silverbach, Spencer, 177 Elm, Enfield 06082
1955 Sonnen, Victor Gerard, 59 Broad Brook Rd., Enfield 06082
1974 Taylor, Thomas Joseph, 2 White Oak Rd., Woodbury 06798
1949 Thayer, R. Bruce, Jr., 221 Whitney Ave., New Haven 06509
1974 Warpinski, Marion A., Rt. 198, Woodstock Valley 06282
1960 Yoon, Ill Lyong, 115 Elm, Enfield 06082

Windham County Association

President: Robert S. Gillcash, 36 Watson at Memorial Park, Willimantic 06226
Vice-President: Romain P. Goyette, 330 Pomfret, Putnam 06260
Secretary-Treasurer: Anne H. Dodd, 86 Puddin La., R.D. #3, Willimantic 06226
Councilor: William A. Whalen, 150 Mansfield Ave., Willimantic 06226
Associate Councilor: Charles J. Middleton, 39 Broad, Danielson 06239
Annual Meeting, Third Thursday in March
Semi-Annual Meeting, Third Thursday in October

ABINGTON 06230

1948 Valentine, Bruce, Eliza F. Clark Memorial Center

CANTERBURY 06331

1976 Galasyn, Valentine David, Buck Hill Rd.

DANIELSON 06239

1935 Chartier, Gerard Marcel, 39 Broad
1959 Grinsell, Harvey James, 112 Broad
1968 Harton, Maurice R., 81 Broad
1949 Jones, James Franklyn, 39 Broad
1973 Khoury, Alexis E., 11 Spring
1974 Middleton, Charles J., 39 Broad
1962 Raheb, Edmond B., 14 Carter
1957 Robinson, Lavius Arad, Jr., 9 Hutchins
1949 Weigel, Stanley Joseph, 53½ Broad

DAYVILLE 06241

1976 Ahola, Saul Joseph, RFD Box 675

EAST WOODSTOCK 06244

1965 Klare, Rudolph Emil, Route 169

HAMPTON 06247

1974 Larkin, John Thomas, Sand Hill Rd.
1959 Sornberger, Charles Franklin, R. F. D.
1974 Woodworth, John A. North Bigelow Rd.

MOOSUP 06354

1948 Barry, E. Arthur, Jr., 1 Maple

NORTH GROSVENORDALE 06255

1976 Chen, Fusen Houston, Thompson Med. Ctr.
1970 Dufort, Robert Thomas, Thompson Med. Ctr., R. D. No. 1
1976 Kuk, Dennis Stanley, Thompson Med. Ctr.
1963 Park, Sowhey, R. R. No. 1

POMFRET 06258

1953 Eaton, Harry E., P. O. Box 238

POMFRET CENTER 06259

1975 Malter, Ira J., RD #1, Box 88

PUTNAM 06260

1942 Bates, David Hinrichs, Hotel Putnam
1969 Bouthillier, Joseph E., R.D. 2, Pomfret Rd.
1963 Canty, William Patrick, 320 Pomfret
1934 Chapnick, Morton Herman, 30 Gilman
1974 Chung, Eui Kyun, R.F.D. #1, Pomfret Rd.
1975 Curran, Edward Allan, 320 Pomfret
1970 Diaz, Arturo, Day Kimball Hospital
1963 Goyette, Romain Philip, 330 Pomfret
1974 Heweston, John Buchan, Day Kimball Hospital
1971 Hochberg, David Thomas, 320 Pomfret
1973 Hogan, Austin Francis, 320 Pomfret
1975 Lojko, Albert Thomas, 330 Pomfret
1975 Neilson, Kevin Charles, Day Kimball Hospital
1941 Margolick, Moses, 23 Providence
1976 McLanahan, Sandra Martin, 158 Main
1959 Meyer, John Louis, Day Kimball Hospital
1969 Painter, Robert Lowell, 330 Pomfret
1975 Paulhus, John Joseph, Day Kimball Hospital
1930 Prosser, Florence Dean, P. O. Box 642
1934 Shepard, William Mac, 64 Grove

THOMPSON 06277

1975 Panzer, Gilbert Russell, Porter Plain Rd., Box 285C
1952 Waldron, Sherman Lester, R. R. 1, Box 2

WILLIMANTIC 06226

1967 Amdur, Millard Jason, Beech Mountain Rd., R.F.D. No. 3
1935 Arnold, Morton, 132 Mansfield Ave.
1950 Beardsley, Frederick Armour, 132 Mansfield Ave.
1966 Becker, George Edward, 150 Mansfield Ave.
1976 Berry, Guy Neill, Box 116
1962 Bird, Frank Luther, 132 Mansfield Ave.
1956 Bolt, Ernest Albert, Jr., 132 Mansfield Ave.
1970 Bopp, Raymond Karl, 150 Mansfield Ave.
1972 Browne, Edward Randolph, Windham Community Memorial Hospital
1969 Calise, Peter Joseph, Windham Community Memorial Hospital
1964 Dodd, Anne H., 86 Puddin La., R.D. #3
1961 Dodd, Samuel Garland, Windham Community Memorial Hospital
1966 Doyle, Fred Wendell, Windham Community Memorial Hospital
1976 Duers, John Allen, 196 Conantville Rd.
1974 Ehrlich, Marvin Cye, 70 Mansfield Ave.
1972 Ellzey, William Joseph, 132 Mansfield Ave.
1973 Flynn, J. Dennis, R.R. 3, 61 Beech Mt. Rd.
1975 Friedman, Robert M., 196 Conantville Rd.
1969 Gibson, Luther White, 132 Mansfield Ave.
1968 Gillcash, Robert S., 36 Watson at Memorial Park
1965 Glasser, Morton, 132 Mansfield Ave.
1968 Glugover, Donald Benjamin, 70 Mansfield Ave.

1947 Grillo, William, 393 Prospect
1973 Griswold, Douglas Marsh, 150 Mansfield Ave.
1974 Hale, Stanton D., 150 Mansfield Ave.
1958 Herbert, Earle Avery, Windham Community Memorial Hospital
1975 Komninos, Anthony, 132 Mansfield Ave.
1970 Lawrence, Gerard James, 150 Mansfield Ave.
1974 Lee, Sangwun, 132 Mansfield Ave.
1975 Lindquist, Carl Warren, 47 Tingley
1940 Little, Mervyn Henry, 196 Conantville Rd., RFD #3
1940 Little, Olga A. G., 196 Conantville Rd., RFD #3
1948 Major, James W., 150 Mansfield Ave.
1973 Moskowitz, Robert Irwin, 70 Mansfield Ave.
1964 Nepomuceno, Maria Nelly, 132 Mansfield Ave.
1971 O'Brien, Gerald John, Windham Community Memorial Hospital
1975 Onglingswan, William Tiu, 43 Tingley
1967 Peterson, Carl Gregory, Jr., 150 Mansfield Ave.
1956 Rosenberg, Murray Zale, Windham Community Memorial Hospital
1937 Rothblatt, Reuben, 132 Mansfield Ave.
1958 Sandler, Gerald, 132 Mansfield Ave.
1963 Sandler, Melvin James, 132 Mansfield Ave.
1958 Sikand, Sage Datt, 70 Mansfield Ave.
1929 Spector, Nathan, 59 Church
1935 Vernon, Sidney, 185 Birch
1959 Whalen, William Anthony, Jr., 150 Mansfield Ave.

SOUTH WINDHAM 06266

1947 Maurer, William Spooner, Babcock Hill Rd.

OUT OF COUNTY

1939 Basden, Edwin Herbert, Rt. 87, Columbia 06237
1973 Blaney, Lamson, Box 154, Mansfield Center 06250
1954 Bowen, Robert Phillip, High, Coventry 06238
1946 Dayton, Neil Avon, 434 Bay Aristocrat, 1475 U. S. Hwy. No. 19, South Clearwater, Florida 33516
1942 Freeman, John Jay, 18 Hillside Circle Storrs 06268
1932 Gilman, Ralph Lawrence, Dog Lane, Storrs 06268
1975 Graham, Robert Grantham, 110 Haley Rd., Ledyard 06339
1971 Haney, John F. B., 667 Chaffeeville Rd., Storrs 06268
1953 Kennedy, George Lloyd, 5 Maple, Jewett City 06351
1975 Kirkpatrick, J. Raoul, Institute of Living, Hartford 06106
1952 LeRoy, John Baptiste, Williston Hill Rd., R #1 West Willington 06279
1970 Loeser, Lucille Kelley, Farmstead Rd., Storrs 06268
1967 McGowan, Thorburn S., University of Connecticut, Storrs 06268
1975 Melton, Alan R., 64 Willowbrook Rd., Storrs 06268
1973 Oxley, Leo L., Box 36, Storrs 06268
1921 Phillips, Karl Tristram, 1174 E. Main, El Cajon, California 92021
1964 Prescott, Blake Daniels, Storrs Rd., Storrs 06268
1970 Rucker, Lucille Gertrude, R.R. No. 1, Box 172A, Storrs 06268
1953 Tobi, Louise Gertrude, Hardy Rd., Loudon, New Hampshire 03301
1970 Wandersee, Edward Paul, Star Route, Mansfield Depot 06251
1972 Wintrob, Ronald Marvin, Devwin Hall, Box 77, Mansfield Center 06250

Associate Members

1941 Burr, Harold Saxton, Town Woods Rd., Old Lyme
1947 Darling, George Bapst, 11 Burns, New Haven 06511
1942 Hamilton, James A., University of Minnesota, Minneapolis, Minn.
1941 Hiscock, Ira Vaughn, 164 Linden, New Haven 06511
1941 Mickle, Friend Lee, 9 Old Pepperidge Lane, Whethersfield 06109
1953 Richardson, William Alan, 99 East Hunting Ridge Rd., Stamford
1954 Sibley, Hiram, 79 West Monroe, Chicago, Illinois 60603

ALPHABETICAL ROLL OF MEMBERS

With medical school and year of graduation

Aaron, S. D., Virginia '64, Westport
Aaronson, R. M., Tufts '67, New Haven
Abad, A. A., Hungarian P. Pazmany '45, Middletown
Abbot, F. K., Virginia '46, Middletown (Hartford County)
Abbott, H., St. Un. N. Y. '52, Rockville
Abbott, J. L., Albany '62, Torrington
Abrahamian, H. A., Salonica '49, Waterbury
Abrahams, I. W., N. Y. U. '57, Meriden
Abrahams, M., Tufts '31, New Canaan
Abrahamson, R. H., McGill '30, Stamford
Abrams, H., State Univ. New York '57, Fairfield
Abrams, R. M., St. Louis Un. '43, Waterbury
Abreu, G. B. Santo Domingo, '62, New Preston
Acqua, L. C., Yale '41, East Hartford
Adamo, B., Seton Hall '62, Rockville
Adams, A. J., Indiana '38, Torrington
Adams, E. C., Cornell '34, Guilford
Adams, G. R., Jefferson '60, New London
Adams, H. A., Trinity Coll. Dublin '47, Cromwell
Adams, M. Johns Hopkins '29, Port Chester, New York (Fairfield County)
Adams, R. J., Ohio State '60, Middletown
Adefuin, Z. A., St. Tomas '65, Bridgeport
Adler, D. H., N. Y. U. '43, Westport
Adzima, J. M., Maryland '27, Trumbull
Agarwal, C. K., King George's Med. Coll. '53, Rocky Hill
Agee, F. B., Jr., George Washington '42, Wethersfield
Aguiar, J. C., Brazil '52, Ansonia
Ahamed, S. Un. Madras '66, Norwich
Ahmed, E. H. S., Alexandria '52, Norwalk
Ahn, W.B., Yonsei Un. Med. '63, Hartford
Ahola, S. J., Cornell '69, Dayville
Ahrens, L. B., Vermont '51, New Britain
Aiello, L. J., Boston '35, Norwalk
Aitken, G. S., N. Y. U. '48, Torrington
Albamonti, M. J., Tufts '38, Norwich
Albanese, A. N., Siena, Italy '53, Danbury

Albert, J. S., N.Y.U. ’68, Weston
Albert, M., Tufts ’57, Meriden
Albis, F. J., Marquette ’46, East Haven
Albis, M. D., Marquette ’48, East Haven
Albom, J. J., Columbia ’39, New Haven
Albright, J. A., Illinois ’54, New Haven
Alden, J. O., Tufts ’47, Hartford
Alder, W. C., Vanderbilt ’70, Hartford
Alderman, D. B., Long Island ’46, New Haven
Alderman, M. Y., Chicago ’49, Bloomfield
Aleali, S. H., Tehran ’64, Bridgeport
Alena, G. R., N. Y. Med. Coll., ’64, Stratford
Alexander, G.S., N. Y. Univ. Sch. of Med., ’66, Greenwich
Alexander, J. M., Seton Hall ’63, Bridgeport
Alfonsi, A. A., Albany ’50, Southington
Alisberg, N., N. Y. U. ’44, Bristol
Allam, A. F., Einshams Un. ’58, Bristol
Allan, T. R., Un. Maryland ’71, Hartford
Allard, G. G., Laval ’50, Darien
Allen, B. I., Washington 32, Norwalk
Allen, E. P., Yale ’24, Cheshire
Allen, J. C., Hahnemann ’39, Hartford
Allen, J. E., Syracuse ’30, Norwich
Allen, M. M., Woman’s Medical ’35, West Hartford
Allen, R., Temple ’43, West Hartford
Allmendinger, P. D., Michigan ’64, Hartford
Allport, V. G., Queen’s Un. ’46, Hartford
Alonso, L., Valencia Spain ’69, Meriden
Alpert, A. E. Creighton ’49, New Haven
Alpert, M., Yale ’28, Bridgeport
Altenberg, H. E., N. Y. U. ’47, West Hartford
Alter, B. N., George Washington ’61, Hartford
Altshul, V. A., Yale ’60, New Haven
Amanti, J. A., N. Y. U. ’49, Stafford Springs
Amarant, L., Vienna ’32, Bridgeport
Amato, J. A., Georgetown ’56, West Hartford
Amato, P. R., Tufts ’61, Hartford
Amatruda, F. G., Yale ’23, New Haven
Amatruda, T. T., Jr., Yale ’51, Waterbury
Ambrose, P., Temple ’42, Bridgeport
Amdur, M. J., Yale ’64, Willimantic
Ameen, L., Virginia ’46, New Haven
Ames, W. G., Columbia ’38, Essex
Amore, F. R., Bologna ’57, New Haven
Amos, I. L., McGill ’26, Tarpon Springs, Florida (Fairfield County)
Anastasi, A. F., Rome ’65, Hartford
Anderson, A. S., Catholic Univ., Belgium ’57, West Hartford
Anderson, C.W., Harvard ’34, Old Greewich
Anderson, D. R., Tufts ’56, Waterbury
Anderson, F. A., Boston ’40, Norwich
Anderson, F. P., Yale ’62, New Haven
Anderson, G. G., Tennessee ’56, Waterbury
Anderson, G. W., Jefferson ’46, Hartford
Anderson, H. B., Indiana ’41, Bridgeport
Anderson, H. C., Minnesota ’43, Palo Alto, California (New Haven County)
Anderson, R. M., Boston ’40, Norwich
Anderson, T. E., George Washington Un. ’64, Torrington
Andrews, A. E., Beirut ’45, Hartford
Andrews, J. F., Jr., Yale ’68, Norwalk
Andrews, R. C., Boston ’50, Norwich
Andrews, W. B., Columbia ’67, Noank
Andrus, O. B., Univ. & Bellevue ’32, Milford
Andrus, W. B., Tufts ’61, Portland
Annunziata, V., Long Island Coll. Hosp. ’30, Newtown
Antell, M. J., Vermont ’29 Southport
Anthony, J. R., Tufts ’60, Waterbury
Anton, M. C., Marquette ’39, West Point, New York (Fairfield County)
Appleby, R. E., Johns Hopkins ’49, Wilton
Apter, H., George Washington ’34, Hartford
Apuzzo, A. A., Tufts ’36, Bridgeport
Arafeh, M K., Syrian ’55, Middletown
Arcano, J. T., Temple ’52, Southington
Archambault, H. A., Tufts ’27, Norwich
Archer, G. W., Un. Texas ’69, Waterbury
Arena, A. J., Albany ’60, Middletown
Argall, T. R., P & S ’61, Bristol
Armbruster, L. D., Women’s Med. Coll. ’47. Cheshire
Armm, M. F., New Jersey Coll. Med. ’65, Bridgeport
Arnault, D. G., Harvard ’43, Middletown
Arnold, M., Harvard ’29, Willimantic
Arnold, P. B., Tufts ’67, Wallingford
Arnold, W. P., Jr., Columbia ’46, Middlebury
Arnstein, R. L., Harvard ’51, Hamden
Aromin, S. C., Santo Tomas ’55, Moosup (New Haven County)
Arons, M. R., Maryland ’30, Hartford
Arons, M. S., Maryland ’57, New Haven
Aronson, A. L., N.Y.U. ’58, Hartford
Arrieta, E. J. M., Santo Tomas ’67, Rockville
Arturi, P. A., N. Y. U. ’52, Greenwich
Aseltine, D. T., Jr., Vermont ’51, Hartford
Ashcroft, A. D., Columbia ’35, Pompano Beach, Florida (Fairfield County)
Asis, J., Cordoba Univ. Argentina ’62, New Haven
Asken, S., Geneva ’58, Stratford
Asuncion, C. M., Philippines ’55, Hartford
Atkins, M. P., Univ. Coll. Cork, Ireland ’57, Rockville
Atlas, E., Albert Einstein ’61, Norwalk
Atocha, J., San Marcos, Peru ’59, New Haven
Atoynatan, T. H., Istanbul ’44, Manchester (New Haven County)
Atwood, A. S., Yale ’45, Torrington
Audet, C. H., Jr., Maryland ’46, Waterbury
Audet, R. J., Maryland ’46, Waterbury
Auerbach, N. Basel ’61, Norwalk
Auerbach, S. R., Tufts ’63, Bridgeport
Austin, G. L., Pennsylvania ’45, Unionville
Austrian, H., Zurich ’55, Trumbull
Aversa, J. M., S.U.N.Y. ’67, New Haven
Axiotis, A. H., Athens ’46, Fairfield
Ayotte, L A., Laval ’55, Bristol
Ayres, P. B., Toronto ’32, Greenwich
Azar, M. A., St. Joseph ’34, Danbury

Babcock, A. L., Jefferson ’52, Hartford
Babenco, G. O., Un. Buenos Aires ’58, Hartford
Bachman, J. P., Buffalo ’26, LaJolla, California (Hartford County)
Bachner, P., Columbia ’63, Greenwich
Backhus, L. C., Syracuse ’33, Waterbury
Badan, B., Graz ’58, Danbury
Badner, D. H., N. Y. U. ’41, Meriden
Bader, L. M., S.U.N.Y. ’67, Bridgeport
Bae, J. G., Seoul Natl’l. Un. ’65, Bristol
Bagdasarian, A. D., Stanford ’62, Bristol
Baggish, M. S., Louisville ’61, Hartford
Bagnall, J. S., Sheffield Un. ’55, Hartford
Bagnall, R. S., Harvard ’43, Bloomfield
Bailey, R. H., Vermont ’55, Hartford
Baird, R. D., Washington ’33, New Milford
Baird, W. H. Tufts ’52, Milford
Baker, E. L., Yale ’61 Derby
Baker, G. L., Washington ’52, Hartford

Baker, S. M., Yale '64, New Haven
Balakrishna, H., Govt. Med. College '63, New Britain
Balakrishna, S., Med. Coll. Mysore, India '61, Glastonbury
Balazs, D. V., Albert Einstein '72, West Hartford
Baldovi, V. C., Jr., St. Thomas '65, Waterbury
Baldwin, D. B., Temple '67, Essex
Baldwin, W. H., N. Y. Med. Coll '41, Manchester
Balfour, J. D., Western Ontario '25, Norwich
Balletto, V., Tufts '33, East Haven
Balmaseda, R. Y., Havana '46, Danbury
Balsam, R. H., Queen's Un. '63, New Haven
Balsam, S. J., Downstate Med. Ctr., '66, Danbury
Baltazar, A. E., Univ. East Philippines '64, Bristol
Baltrucki, H. C., Vermont '52, Hartford
Banfield, R. S., Jr., Columbia '51, Stamford
Banks, D. T., Fordham '12, Bridgeport
Bannon, F. M., Vermont '28, Stamford
Banyard, R. D., Columbia '67, Greenwich
Baptist, V., Boston Un. '42, Bristol
Barald, F. C., Boston '36, Hartford
Baratz, M. A., Rochester '50, New Haven
Barber, R. R., Vermont '30, Tucson, Arizona (Fairfield County)
Barbour, C. M., Jr., McGill '38, West Hartford
Barbour, P. H., Jr., Yale '41, Farmington
Bardenheier, J. A., St. Louis '63, Essex
Barese, A. M., Naples '35, Danbury
Barile, A. W., Loyola '43, New Haven
Barker, D. C., Maryland '40, Fairfield
Barker, N. J., Toronto '26, West Hartford
Barnett, R. N., Yale '38, Westport
Barney, W. E. Yale '35, Milford
Baron, B. R., Chicago Med. '62, Stamford
Baron, M. A., Albert Einstein '61, Milford
Barrera, A. M., Aurora Univ '41, Niantic
Barrero, E. F., Santiago '53, Bridgeport
Barrett, F. C., Vermont '46, Norwich
Barrett, J. J., Boston Un. '66, Torrington
Barri, A. R., Vermont '70, Groton
Barroeta, G. R., Central Un. Caracas '63, New Haven
Barry, E. A., Jr., Laval '46, Moosup
Barry, J. C., Boston '33, Manchester
Barry, R. M., Pennsylvania '54, Mystic
Barry, R. T., Columbia '46, West Hyannisport, Massachusetts (Hartford County)
Barse, R. J., Creighton '64, New Haven
Barstow, R. I., Jefferson '33, Norfolk
Bartlett, E. W., Yale '67, New Haven
Barton, D. C., Rochester '52, Portland
Barton, J., N. Y. U. '58, Norwalk
Bartus, S. A., St. Louis '58, Hartford
Barwick, P. E., McGill '62, Granby
Barysh, N., Rush '33, Danbury
Basden, E. H., Tufts '33, Columbia (Windham County)
Basile, J. X. R., Vermont '53, Hartford
Baskin, A. H., Minnesota '32, Storrs (Hartford County)
Baskin, A. M., Albany '52, New Haven
Bass, D. M., Tufts '67, Hartford
Bassford, W. W., Tufts '54, Watertown
Basu, S. K., Calcutta '60, Hartford
Batelli, C. F., Yale '28, New Haven
Bates, D. H., Long Island '39, Putnam
Batt, H. D., Hahnemann '50, New Haven
Battista, A. W. Tufts '24, New Haven
Baue, A. E., Harvard '54, New Haven
Bauer, W. F., Jr., N. Y. Med. Coll. '50, Killingworth
Baum, S. J., Vermont '48, Fairfield
Bausch, C. P., Tufts '29, Nantucket, Massachusetts (Hartford County)
Bauta, H. P., Univ. Havana '60, Newtown
Baxter, M. F., Tufts '53, Glastonbury
Bayer, A. E. Vermont '48, New Britain
Bayless, A. E., Southern California '45, Bridgeport
Beakey, J. F., Tufts '43, Hartford
Bean, K. F., Tufts '60, Bristol
Beardsley, F. A., Cornell '43, Willimantic
Beasley, A. S., N. Y. U. '47, Westport
Beatman, B., Albany '52, New London
Beatrice, A. A., Tufts '29, Bristol
Beatrice, M. A., Columbia '56, New Haven
Beaty, J. T., Columbia '43, Greenwich
Beauchamp, L, A., Vermont '44, Waterbury
Beaudoin, J. R., Creighton '68, Danbury
Beck, D., Albany '54, Westport
Beck, E. C., Yale '26, New York City (Fairfield County)
Beck, E. M., Yale '48, Greenwich
Beck, J. E., Virginia '39, West Haven
Beck, R. S., Temple '50, Hartford
Beck, S. H., Rochester '34, Bridgeport
Becker, A. H., Vermont '43, Bristol
Becker, G. E., Yale '55, Willimantic
Becker, I. W., Vermont '52, Bristol
Becker, J., Univ. & Bellevue '29, New London
Beckett, R. S., Yale '40, Hartford
Bedrick, M., Harvard '43, New London
Bee, R. W., Jefferson '60, New Britain
Beebe, J. T., Columbia '38, Hartford
Beeble, J., Albany '48, Waterbury
Behringer, F. R., Basel '52, Waterford
Beinfield, M. S., Long Island '45, Westport
Beizer, E., Long Island '30, Hartford
Belkin, J. W., Maryland '49, New Britain
Bellach, H., Long Island '33, New Britain
Belleza, N. A., Univ. Philippines '63, New Haven
Bellin, A., N. Y. U. '45, Stamford
Bellis, J. M., Jr., Harvard '51, Hamden
Bellizzi, J. J., Tufts '47, Hartford
Bellobuono, J. R., Liege '59, Middletown
Bellucci, A. L., Vermont '54, South Glastonbury
Belman, D. A., Jr., McGill '66, New Britain
Benavides, C. G., Pennsylvania '60, Manchester
Bender, L., Hahnemann '39, Salem
Bender, M., Med. Coll. Virginia '59, New Haven
Bender, S. H., Chicago '61, Westport
Bendett, R. J., Tufts '55, Hartford
Benjamin, B. I., Columbia '61, Stamford
Benjamin, M. R., N. Y. Med. Coll. '50, Stamford
Benkovich, G. O., Budapest '30, Rocky Hill
Bennett, A. M., Un. Illinois '47, Wilton
Benninghoff, D. W., Columbia '53, Greenwich
Benoit, R. J., Georgetown '26, Clearwater, Florida (Hartford County)
Bensch, K. G., Erlangen '53, Stanford, California (New Haven County)
Benton, A. J., State Univ., N. Y. '57, New Canaan
Benton, P.E., Columbia '34, Orleans, Massachusetts (New Haven County)
Beres, M., Komensky Univ. '59, Bridgeport
Berg, G. R., Univ. Rochester '67, Waterbury
Beres, P., Columbia '52, Westport
Bergendahl, G. T., Tufts '61, Norwich
Bergendahl, H. A., Tufts '33, Norwich
Berger, D. S., S.U.N.Y. '63, Danbury
Berger, J., Univ. Florida '63, East Hartford
Berkley, R. B., Un. Penna. '66, West Hartford

Berkun, S. G., Lausanne '63, Bridgeport
Berland, R. H., Minnesota '61, Hartford
Berlin, B. B., McGill '56, Hartford
Berlowe, M. L., State Univ. N. Y. '23, New Haven
Berman, L. H., Edinburgh '49, Westport
Berman, S., Long Island '43, New Haven
Bernacki, E. J., New Jersey Coll. Med. '67, Torrington
Bernanke, M., St. Louis '27, Southbury
Bernard, M. T., N. Y. Med. Coll. '44, Norwalk
Berneike, R. R., Western Reserve '41, New Haven
Bernene, J. L., Albany '67, Greenwich
Bernstein, A., N. Y. U. '53, New Britain
Bernstein, A., Yale '08, Bridgeport
Bernstein, A. E., N.Y.U. '58, Middletown
Bernstein, C. M., N. Y. Med. Coll. '54, New Britain
Bernstein, D. J., Vermont '33, New Britain
Bernstein, J., Georgetown '51, Bridgeport
Bernstein, L., Berne '36, Hartford
Berry, G. N., George Washington Un. '45, Willimantic
Berry, R. W., Columbia '50, Bridgeport
Bersier, A. M., Berne '41, Bridgeport
Berte, J. B., Georgetown '58, Cleveland, Ohio (New Haven County)
Bertuch, A. W., Maryland '60, Middletown
Berwick, P., N. Y. U. '38, Moodus
Bessa, O., Jr., Parana-Brazil '56, Stamford
Besser, E. L., Johns Hopkins '37, Manchester
Betten, M. G., Albert Einstein '66, Norwich
Beup, L. P., Univ. Santo Tomas '68, Terryville
Biassey, E. L., Howard '47, Stratford
Biehn, D. M. F., Queen's '37, Fairfield
Biehn, S. L., Toronto '26, Bridgeport
Bielecki, C. E., Tufts '39, Norwich
Billings, W. C., Columbia '50, New Haven
Bingham, D. B., Columbia '66, Salem
Binnie, H.S.P., Edinburgh, Scotland '52, Bethel
Biondi, B, Tufts '38, New Haven
Biondi, R. M., Creighton '64, Norwalk
Birchall, E. F., Vermont '47, Watertown, New York (New London County)
Bird, F. L., Cornell '48, Willimantic
Bird, F. S., Vermont '33, Bristol
Birge, E. B., N. Y. Med Coll. '57, Stratford
Birge, H. L., Pennsylvania '33, East Hartland
Birnbaum, H. B., Royal Coll. England '35, Madison
Birney, T. P., Northwestern '39, Bridgeport
Bisceglia, J. G., Georgetown '48, Greenwich
Bishop, C. C., Yale '30, Wardsboro, Vermont (New Haven County)
Bisson, B. P., Vermont '53, Waterbury
Bizzozero, O. J., Vermont '27, Waterbury
Bizzozero, O. J., Jr., St. Univ. New York '62, Waterbury
Blabey, R. G., Jr., Columbia '67, Stamford
Black, J. S., Stritch '59, Hartford
Blain, C. A., Ottawa '57, Waterbury
Blakeslee, Sister M. H., Ottawa '67, West Hartford
Blanchard, B. M., Temple '54, Hartford
Blanchard, D. L., Yale '31, Branford
Blaney, C. C., Boston '40, Bridgeport
Blaney, L., Cornell '40, Mansfield Center
Blank, G. I., Bern '59, New Britain
Blank, M. B., Aberdeen '50, Bridgeport
Blank, S., Virginia '41, Waterbury
Blank, V. E., Free Univ. Brussels '54, Bridgeport
Blansfield, H. N., Yale '47, Danbury
Blass, J. W., Univ. Vienna '27, Stamford
Blau, J. S., Upstate Med. Ctr. '68, New Britain
Blechner, J. N., Yale '57, Farmington
Blodinger, I. E., Yale '25, Boca Raton, Florida (New Haven County)
Blogoslawski, W. J., Georgetown '27, New Britain
Blomquist, W. S., Tufts '69, Granby
Bloom, D. I., Tufts '35, Thompsonville
Bloom, G. P., Cornell '69, Hartford
Blossom, D. B., Columbia '38, Greenwich
Blum, L. M., Duke '55, Fairfield
Blumberg, J. M., N.Y.U. '66, Old Greenwich
Blumer, A. T., St. Un. N.Y. '66, Southington
Boas, N. F., Harvard '45, Mystic (Fairfield County)
Bobowick, A. R., Tufts '66, Waterbury
Bobrow, A., Berne '39, Hartford
Bobrow, S. M., Downstate Med. Ctr. '68, New Haven
Bobruff, J., Yale '55, New London
Bockar, J. A., Hahnemann '69, Stamford
Boelhouwer, C., Leiden '57, Hartford
Bogdan, P. E., N. Y. U. '58, Greenwich
Bogin, M., Yale '26, Bridgeport
Bohan, G. N., Amer. Univ. Beirut '44, Decatur, Georgia (New Haven County)
Boissevain, A. R., Jefferson '63, Oxforl
Bolstad, R. A., Southern California '47, Newtown
Bolt, E. A., Jr., Johns Hopkins '50, Willimantic
Boltax, R. S., Boston '63, Derby
Boltax, S. P., Temple '62 New Haven
Bolton, J. D., Hahnemann '43, Greenwich
Bonaccorsi, B. I., Pisa-Italy '55, Waterbury
Bondy, P. K., Harvard '42, London, England (New Haven County)
Bonhein, N. A., Chicago '70, Greenwich
Bonner, G. A., Vermont '45, New Haven
Bonner, R. A., Jr., Maryland '38, Waterbury
Bonnett, D. N., Illinois '43, Greenwich
Bonney, H. T., Toronto '52, Hartford
Book, D. T., Western Reserve '43, Hartford
Boorer, R. T., St. Thomas '55, Ridgefield
Bopp, R. K., Vanderbilt '56, Willimantic
Borden, W. A., New York Univ. '58, Bloomfield
Boren, C. W., Washington Univ. '60, Hartford
Boreyko, C. J., Univ. Argentina '65, Bridgeport
Borger, A. P., Michigan '53, Old Lyme
Borges, J. S., Cornell '70, Greenwich
Bornemann, C., N. Y. Med. Coll. '40, Falls Village
Bornstein, H. D., Jr., Yale '53, North Haven
Borowy, J. E., Yale '50, Stamford
Borrelli, A. P., St. Univ. New York '60, Newtown
Borsos, L. A., Pazmany '50, Bridgeport
Bottiglieri, N. G., Un. Vermont '45, Stamford
Bousa, W. S., N. Y. U. '48, Bridgeport
Bouthillier, J. E., Georgetown '61, Putnam
Bove, J. R., Maryland '53, New Haven
Bowen, F. D. T., Maryland '42, West Hartford
Bowen, M. G., Birmingham '68, Ridgefield
Bowen, R. P., N. Y. Med. Coll. '52, Coventry (Windham County)
Bowen, W. R., Syracuse '53, Brookfield
Bower, B. F., Johns Hopkins '58, Hartford
Bower, R. S., Madras '45, New Britain
Bowers, G. N., Jr., Yale '54, Hartford
Bowman, S H. Hahnemann, Chicago '13, Naples, Florida (Fairfield County)
Boyd, J. E., Albany '62, Milford
Boyd, R. B., Tufts '41, Wallingford
Braat, J. P., Utrecht '30, Manchester
Braceland, F. J., Jefferson '30, Hartford
Brackett, J. W., Jr., Columbia '58, Waterbury
Bradburn, H. B., Vanderbilt '56, New Haven
Bradford, K. A., Downstate Med. Ctr. '65, New Haven
Bradley, D. F., Jr., N. Y. Med. Coll. '57, Hartford
Bradley, E. G., Cornell '48, Bridgeport
Bradley, E. T., Cornell '36, Norwalk

Bradley, H. A., Jr., Cornell '40, Norwalk
Bradley, R. E., Jr., N. Y. U. '58, Woodbridge
Bradley, W. R., N. Y. Med. Coll. '49, Hartford (New Haven County)
Brady, J. J., Tufts '55, Hamden
Branch, J. C., Johns Hopkins '59, New Haven
Brand, E. S., N. Y. U. '43, New Haven
Brandon, K. F., Toronto '32, Hartford
Brandriss, J., Columbia '26, Miami Beach, Florida (Hartford County)
Brandt, A. A., Yale '51, Milford
Branham, H. E. Jr., South Carolina '57, Stamford
Branom, W. T., Jr., New York Univ '60, Greenwich
Braren, C. H., Albany '62, Wethersfield
Bratu, M., Bucharest-Rumania '51, Derby
Braun, R., Vienna '29, Bridgeport
Braun, R. W., Nebraska '65, Stamford
Braverman, I. M., Yale '55, New Haven
Bravo, A. J., Yale '64, Bridgeport
Bray, G. H., Vermont '47, New Britain
Breakell, E. S., Buffalo '47, Stamford
Breck, R. W., Yale '45, Wallingford
Breer, R. D., Harvard '54, Manchester
Brenneman, A. R., Yale '58, Hartford
Brensilver, H. L., Columbia '67, Mystic
Brewer, A. E., N. Y. U. '41, Lakeville
Brewer, F., Columbia '20, El Cerrito, California (Hartford County)
Brewer, S. V. L., Hamburg '59, West Hartford
Brewer, T. F., III, New York '57, Old Saybrook (Hartford County)
Brewster, W. B., Jr., Harvard '42, Hartford
Breyan, N. R, N. Y. Med Coll. '67, Bridgeport
Brezina, P. S., Yale '40, Bristol
Bria, W. F., Rome '34 Cos Cob
Bridburg, R. M., Trinity Coll. Dublin '61, Hartford
Brier, H. D., N. Y. U. '34, Bridgeport
Briggs, H. C., Yale '57, Winsted
Briggs, R. S., Yale '61, Torrington
Brigham, J. C., Tulane '57, Hudson, Massachusetts (New Haven County)
Brink, A. J., Buffalo '62, New Haven
Britting, J. A., Albany '55, Windsor
Broadhead, A. J., Westminster Hosp. '62, Hartford
Brochin, M., Harvard '56, New Haven
Brock, W. H. McGill '45, Old Greenwich
Brockway, D. W., Long Island '43, Woodbridge
Brodey, J. F., Jefferson '66, West Hartford
Brodner, R. A., Loyola '72, New Haven
Brodoff, M., Geneva '53, West Haven
Brodoff, S. S., N. Y. U. '46, New Haven
Brody, B. S., Yale '28, New Haven
Brody, D. M., Virginia '61 Norwalk
Brogden, J. M., Tufts '55, Guilford
Bronson, W. R., Un. Rochester '58, Hartford
Brook, J. E., N. Y. Univ. 68, Ridgefield
Brooks, N. H., Hahnemann '68, Rockville
Brooks, P. L., McGill '32, Bridgeport
Brosnan, J. F., Tufts '30, New London
Brothers, D., N. Y. Med. Coll. '66, Milford
Brovender, A., Brussels '58, Norwalk
Brovender, S., Leyden '59, Westport
Brown, B., Harvard '64, Hartford
Brown, C. R., Cornell '45, New Canaan
Brown, D. A., Long Island '46, Darien
Brown, D. H., Un. Vermont '54, Middletown
Brown, D. L., Columbia '55, Hartford
Brown, D. S., Cornell '45, New Canaan
Brown, F. F., Jr., Columbia '40, Torrington
Brown, H., St. Un. N. Y. '58, New London
Brown, H. J., Maryland '65, Westport
Brown, L., Jefferson '61, Hartford
Brown, M. M., Columbia '69, Sharon
Brown, M. R. S., Temple '43, Meriden
Brown, P. N., Hahnemann '43, Meriden
Brown, P. W., Univ. Michigan '50, Bridgeport
Brown, R. B., Cornell '47, Hartford
Brown, R. J., Maryland '44, Trumbull
Brown, S. A., New York Univ. '66, Hartford
Brown, S. F., Univ. Minnesota '45, Darien
Brown, W. M., Glasgow '42, Groton
Brown, W. T., P. P. Un. Budapest '32, Derby
Browne, E. R., Tufts '46, Willimantic
Browne, F. J., Nat'l. Univ. Ireland '58, Stamford
Browne, H. H., Albany '56, Southington
Browne, M. A., Cork '50, Stamford
Browning, L. D., Jr., Harvard '49, Stamford
Browning, S. P., III, Columbia '54, Norwich
Brubaker, R. E., Pennsylvania '36, Old Lyme
Bruno, J. J., Hahnemann '35, New Haven
Bruskin, C. E., Leipzig '32, Hartford
Buchalter, D. J., Michigan '63, Middetown
Buchman, J. G., N. Y. U. '57, Ridgefield
Buck, B. J., Harvard '26, West Hartford
Buckley, J. L., Tufts '40, Torrington
Buckley, M. B., National Univ. Ireland '57, Waterbury
Buckley, W. E., Boston '33, Middletown
Buckman, R. F., Long Island '45, Milford
Bucknam, C. A., Columbia '57, Hartford
Bucknam, F. G., Harvard '47, West Hartford
Bucky, T. L., Yale '43, Weston
Buebendorf, D. P., Yale '60, Essex
Bujdud, C. M., Un. Puebla '52, Stamford
Bulaong, R. G., Sto. Tomas '54, Hartford
Bull, M. B., Columbia '62, Darien
Bull, S. M., Physicians & Surgeons '62, Stamford
Bullen, H. G., Pennsylvania '41, Stamford
Bullwinkel, G. A., Jr., Columbia '61, Stamford
Bunce, J. M., Yale '42, Hartford
Bundy, E. S., Vermont '48, Meriden (Hartford County)
Buol, R. S., Harvard '23, New Britain
Buonomano, R. J., New Jersey Coll. '68, Simsbury
Burack, J. O., Tufts '39, South Norwalk
Burbank, J., Harvard '43, Meriden
Burch, P. G., Johns Hopkins '63, Meriden
Burchell, R. C., Buffalo '54, Hartford
Burd, R. M., Columbia '63, Fairfield
Burke, A. V., Georgetown '53, Norwalk
Burke, F. H., Georgetown '31, Rockville
Burke, G. F., Minnesota '54, Northfield (Hartford County)
Burke, W. H., Cornell '45, Bridgeport
Burkle, F. M., Jr., Vermont '65, Hanover, New Hampshire (Middlesex County)
Burnham, B. A., Tufts '34, Waterbury
Burnham, B. E., Pennsylvania '64, Farmington
Burnie, G. A., Yale '35, Danbury
Burns, D. W., Georgetown '65, Manchester
Burns, J. E., Tufts '40, Hartford
Burris, J. O., Rochester '56, Danbury
Burton, G., New York Univ. '63, New London
Buscemi, A., Georgetown '39, Brookfield
Bush, H. S., Jr., Cornell '57, Rockville (Hartford County)
Butenas, C., Rochester '53, Meriden
Butler, R. W., Tufts '30, Cheshire
Butterfield, R. K., Tufts '50, Manchester
Butterfield, W. L., Jr., Harvard '41, Hartford
Byard, R. M., Woman's Med. Coll. Pa. '52, Bridgeport
Byer, S., George Washington '57, New Britain
Byrne, D. W., Columbia '27, Windsor Locks

Cacace, V. A., Loyola '39, Bridgeport
Cadelina, W. E. Santo Tomas '62 Derby
Calabrese, C. T., Johns Hopkins '65, Bridgeport
Calabresi, M., Florence '26, New Haven
Caldarelli, R. A., Loyola '47, Hartford
Caldwell, D. M., Jr., McGill '52, Manchester
Calio, J. V., Stanford '46, Hartford
Calise, P. J., Washington Univ. '55, Willimantic
Callahan, J. L., Georgetown '45, Newington
Callan, J. P., Univ. Coll. Dublin '63, Wethersfield
Callan, W. M., UConn. '73, West Hartford
Calogero, J. A., N. Y. U. '63, Hartford
Camarda, A. L., Naples '41, Bridgeport
Cameron, I. R., Trinity Coll. Dublin 61, East Hartford
Camilleri, J. A., Yale '55, New Haven
Camp, W. A., Emory '57, Greenwich
Campbell, C., L. I. College Hosp. '25, Wilton
Campbell, D. I., Queens Un. Ireland '62, Middlebury
Campbell, I. G. Univ. Durham '58, Manchester
Campbell-Jacobs, R. M., Western Reserve '60, Middletown
Campbell, M. F., Duke '61, Greenwich
Campbell, R. H., Wayne '35, Hartford
Campbell, S., Vermont '23, Meriden
Campione, M. P., Lausanne '54, Meriden
Candels, L. R., St.U. N.Y.C. '52, Aron
Caney, W. H., Albany '41, Watertown
Canfield, N., Michigan '29, Branford
Canniff, J. C., Cornell '43, Torrington
Canter, N. M., N. Y. U. '55, Bridgeport
Canty, W. P., Nat'l. Univ. Ireland '54, Putnam
Canzonetti, A. J., Chicago '44, Waterbury (Hartford County)
Capobianco, A. P., N. Y. Med. Coll. '40, Bridgeport
Capodilupo, V. M., Naples '54, Bridgeport
Cappelletti, A. J., Jefferson '46, Waterbury
Cappucci, L. W., Georgetown '53, New Haven
Caragol, W. J., N. J. Coll. of Med. '68, Riverside
Carangelo, E. V., Tufts '31, New Haven
Carangelo, J., Tufts '38, Hartford
Cardin, M. J., Med. Coll. Georgia '64, Southport
Cardone, M. J., Vermont '37, Bridgeport
Carelli, G. F., Yale '11, New Haven
Carey, T. B., Albany '44, Delray Beach, Florida (Hartford County)
Carey, W. C., Columbia '33, Meriden
Carignan, R. Z., Georgetown '40, Farmington
Carino, J. M., N. Y. Med. Coll. 66, Stamford
Carlson, C. E., Maryland '37, New Britain
Carlson, D. A., Yale '58, New Haven
Carlton, L. S., Harvard '52, Hartford
Carolan, P. J., Seton Hall '63, Bridgeport
Carpentieri, J. C., Lausanne '58, Hartford
Carr, M. F., Univ. Coll. Dublin '54, Cromwell (Hartford County)
Carrabba, S. R., Jefferson '46, Bloomfield
Carrol, J. E., Boston '25, West Hartford
Carroll, P. R., Jr., Georgetown '29, Bridgeport
Carroll, R. Mc., West Virginia '65, Westport
Carter, F. J., N. Y. U. '47, Norwich
Carter, M. G., Harvard '41, New Haven
Carter, M.K., Georgetown '52, Norwich
Cartland, J. E., Jr., Columbia '43, Hartford
Carvey, E. V., Yale '35, Wethersfield
Cary, J. M., Western Reserve '45, Newington (New Haven County)
Casale,, A. J., Hahnemann '60, Hartford
Casazza, A. R., Columbia '62, Danbury
Caserta, S. J., Georgetown '37, Bridgeport
Casey, E. J., Georgetown '58, Bronx, New York (Hartford County)
Casey, T. R., Univ. of Manitoba '57, Fairfield
Cashman, J. L., Hahnemann '37, North Haven
Cassell, R. T., Geneva '54, Westport
Cassin, C. M., New York Med. Coll. '59, New Haven
Cassone, R., Vermont '41, Stamford
Castagno, M. M., Boston '43, Hartford
Castagno, R. A., Columbia '41, Hartford
Castaldo, L. F., Tufts '37, Fairfield
Castiglione, F. M., N. Y. Med. Coll. '42, New Haven
Castro, R. A., Buenos Aires '66, Meriden
Castro, R. P. Havana '45, Danbury
Catanuto, N. T., Dalhousie '61, Derby
Catlin. B., Harvard '66, Greenwich
Catrini, V. J., N. Y. Med. Coll. '67, Middletown
Cavallaro, P. J., Bologna '51, New Haven
Cavaliere, V. J., N. Y. U. '43, Bridgeport
Cavalieri, R. J., Jefferson '42, Wethersfield
Cavicke, D. C., Tufts '52, New London
Cavo, J. W., Jr., Virginia '66, New Britain
Celentano, L. E. H., Hahnemann '30, New Haven
Cenci, V. P., Tufts '29, West Hartford
Cerciello, R. L., George Washington Univ. '68, Newington
Cerritelli, D. H., New York Med. '62, Middletown
Ceulemans, C. P., Ghent '52, Middletown
Chace, C. W., Yale '52, Middletown
Chachkes, J. T., Chicago '58, New Canaan
Chadda, S. K. B., Andhra Med. Coll. '62, Bridgeport
Chait, S. A., Nebraska '40, Litchfield
Chamberlin, A. C., Boston Univ. '57, Stamford
Chambers, C. F., George Washington Un. '61, Ridgefield
Chan, D. W., Kwong Wah Med. Coll., '54, Norwalk
Chandrashekara, B. G., Mysore '66, Milford
Chang, E. C. C., Hong Kong '64, New Haven
Chang, S. C., Seoul '47, New Haven
Chapnick, G. A., Vanderbilt Un. '64, Norwalk
Chapnick, M. H., Jefferson '32, Putnam
Charde, J. P. Pennsylvania '67, Sharon
Charendoff, L., Toronto '56, Manchester
Chartier, G. M., Boston '33, Danielson
Chasnoff, J. A., Long Island '36, West Haven
Chastanet, D. V. P., Montpellier '59, Milford
Chaucer, N. G., Columbia '41, Hartford
Chavez, A., Univ. Santiago, Spain '64, Waterbury
Chen, F. H., Tien Tsin Med. Coll. '58, North Grosvenordale
Chen, M. G., Un. Michigan '62, New Haven
Cheney, C. B., Yale '41, New Haven
Cherry, J. B., McGill '43, Danbury
Chess, J., Boston Un. Sch. of Med. '70, Norwalk
Chester, L. L., Vermont '38, Bloomfield
Chetrick, A., Yale '53, New Haven
Cheung, E. H. F., Un. of the East '67, North Branford
Chheda, J. R., G. S. Medical '63, New London
Chiappinelli, D., Tufts '46, Milford
Chiaramonte, C. T., Long Island '26 North Salem, New York (Fairfield County)
Chick, F. B., N. Y. Med. Coll. '46, Easton
Chinniah, A. N., Ceylon '67, Bridgeport
Chiota, J. A., Vermont '37, Bridgeport
Chirot, M., Un. Paris, '39, Stafford Springs
Chobian, J. A., Loyola '33, Oxford
Choi, C. S., Seoul Nat'l, Un. '58, Farmington
Choks, Y. H., Fac. Med. India '62, Bridegport
Chotkowski, L. A., Yale '42, Kensington
Chowdhury, M. G., Dacca Med. Coll., Bangladesh '69, Windsor
Christie, F. J., N. Y. U. '46, Greenwich
Christoforo, J. M., Georgetown '64, North Haven
Chu, C. C. C., Sun Yat Sen Un. '57, Flushing, New York (Fairfield County)
Chumnanvech, N. L., Chlengmai Med. Sch. '67, Fairfield

Chung, E. K., Yonsei ’62, Putnam
Ciardiello, K. A., New Jersey ’68, New Haven
Ciccarelli, A. W., Hahnemann ’42, Bristol
Cihak, H., Charles Un. ’62, East Hartford
Cimmino, G. N., Yale ’60, Ansonia
Cinti, D. C., Temple ’69, Hartford
Cipriano, A. P., Long Island ’41, New Haven
Cirmo, W. F., Vermont ’59, Wallingford
Citrano, E. C. Louvain ’58, Trumbull
Clapp, P., Harvard ’52, New Britain
Clark, B. B., Cornell ’37, New Britain
Clark, H. T., Jr., Rochester ’44, Woodbridge
Clark, I., Albany ’65, Hartford
Clark, M. L., Tufts ’65, Washington
Clark, S., Jr., N. Y. Med. Coll. ’57, Middletown
Clarke, C. C., Yale ’32, New Haven
Clarke, H. M. Rochester ’39, New Britain
Clarke, W. A., Georgetown ’46, Hartford
Clarke, W. I., Harvard ’41, South Daytona, Florida (New Haven County)
Clason, F. P., Harvard ’15, West Hartford
Clayton, E. M., Yale ’59, New London
Clayton, J. A., State Univ. N. Y. ’54, Cos Cob
Cleaver, R. S., Jr., Cornell ’45, Bridgeport
Clement, D. H., Harvard ’35, New Haven
Clift, G. V., Columbia ’58, Fairfield
Climo, S., Ohio ’29, New Haven
Cloonan, J. J., Georgetown ’40, Stamford
Coassin, N. A., Yale ’55, Milford
Coates, S. P., Maryland ’34, Suffield
Cobb, R. J., N. Y. Med Coll. ’57, Hartford
Cocco, T. D., Rome ’57, Bridegport
Cocilovo, V., Palermo ’53, Meriden
Cody, T. P., Long Island ’36, New Canaan
Coe, M. J., Queen’s Univ. ’57, Portland
Coe, R. E., Tufts ’51, Hamden
Coelho, J. N., Lisbon ’49, Hartford
Cogswell, L. P., Harvard ’33, Hartford
Cohart, E. M., Columbia ’33, New Haven
Cohen, B., Albany ’42, Newington
Cohen, G A., S.U.N.Y. ’68, Ridgefield
Cohen, G. M., College of Virginia ’69, Meriden
Cohen, G. S., Yale ’63, Orange
Cohen, H. G., N. Y. Med. ’43, Danbury
Cohen, I. S., S.U.N.Y. ’67, Fairfield
Cohen, L. S., N. Y. U. ’58, New Haven
Cohen, R. B., St. Univ. N.Y. ’69, Bloomfield
Cohen, R. H., Un. Pittsburgh ’66, Avon
Cohen, S. A., N. Y. U. ’66, Stratford
Cohen, S. L., Buffalo ’53, Bridgeport
Cohen, W., Western Reserve ’56, Waterbury
Cohen, W., Yale ’23, New Haven
Cohen, W. B., N.Y.U. ’63, Fairfield
Cohn, G. L., Hahnemann ’50, Hamden
Cohn, S. H., Boston ’34, Hartford
Colburn, R. F., Vermont ’37, Stamford
Cole, J. W., Washington ’44, New Haven
Cole, M. J., St. Bartholomew’s ’39, Hartford
Cole, R. G., Meharry ’44, New Haven
Cole, R. M.. Cincvinnati ’57, Greenwich
Coleman, J. V., Vienna ’34, New Haven
Coleman, M., Long Island ’42, Stamford
Coleman, P. J., Georgetown ’54, Danbury
Coletti, L., Vermont ’57, Norwich
Coley, G. M., Harvard ’53, Hartford
Collias, J. C., Yale ’56, Hartford
Collins, C. D., Univ. Illinois ’65, Plainville
Collins, J. O. Baylor ’29, Watertown (New Haven County)
Collins, J. T., Jr., State Univ of N. Y. ’57, New Haven
Collins, R. N., Yale ’62, Sharon
Collins, W. F., Yale ’47, New Haven
Colliton, R. J., Kansas ’62, Vernon (Hartford County)
Colman, N. D., Tufts ’67, Sharon
Colmers, R. A., Vienna ’37, Savannah, Georgia (Fairfield County)
Colwell, B. S., Yale ’48, Hamden
Combs, J. T., Johns Hopkins ’59, Wallingford
Conant, R. G., Georgetown ’49, Hartford
Concannon, P. R., Nat’l Un. Ireland ’64, Meriden (Middlesex County and New Haven County)
Conklin, C. T., Jr., Vermont ’41, Thomaston
Conklin, T. J., Louisiana St. ’66, Hartford
Connell, T. H., Jr., Michigan ’45, Bridgeport
Connolly, A. J., Georgetown ’28, New Haven
Connolly, J. P., Georgetown ’36, Stamford
Connor, G. M., Boston ’35, Plantsville
Conrad, C. C., Tufts ’54, Colchester
Conroy, J. T., Vermont ’55, West Hartford
Conroy M. M., Cornell ’59, Meriden
Conte, B. L., N. Y. Med. Coll. ’50, New Haven
Conte, H. C., N. Y. U. ’54, New Haven
Conte, M. G., Naples ’35, New Haven
Conway, D. F., Jr., Columbia ’37, New Haven
Conway, E. J., Yale ’44 Hartford
Conway, M., St. Bartholomew’s ’43, West Hartford
Cook, C. B., London Univ. ’51, Stamford
Cook, D. E., Cincinnati ’55, Old Saybrook
Cook, R. S., Jr., Hahnemann ’68, Rockville
Cook, T. J., Pennsylvania ’59, Norwich
Cook, W. H., Western Ontario ’47, Bridgeport
Cooke, R. W., Yale ’43, Hartford
Coolidge, M. P., George Washington ’62, Fairfield
Coomaraswamy, R. P., N. Y. U. ’59, Greenwich (Litchfield County)
Cooney, G. E., Nebraska ’60, Bridgeport
Cooper, D. W., Pennsylvania ’54, New London
Cooper, M., Cornell ’48, Fairfield
Cooper, P. A., State Univ. N. Y. ’53, Hartford
Cooper, R. A., Rochester ’60, New Haven
Copeck, G., Zurich ’56, Stratford
Coppes, H. R., Amsterdam ’57, Milford
Coppeto, C. J., Marquette ’39, Waterbury
Coppola, P. J., Georgetown ’69, New Haven
Coral, M., University of Zurich (Switzerland) ’39, Terryville
Corazzelli, F. G., Jr., Bologna ’56, Trumbull (New London County)
Corcoran, M. A., Tufts ’30, Cromwell (Hartford County)
Corey, J. M., Tufts ’59, Norwalk
Corey, W. Van A., George Washington ’33, Hamden
Corley, E. H., Howard ’49, Bridgeport
Cornacchia, R., Naples ’51, Naugatuck
Cornelio, F. J., Georgetown ’34, Winsted
Cornett, S. J., Queens ’55, Cromwell
Corradino, C. L., Tufts ’29, New Haven
Corridon, J. D., Georgetown ’28, East Norwalk
Corsaro, T. P., State Univ. New York ’56, Milford
Corso, P. F., Tufts ’52, Bridgeport
Corwin, D. B., Syracuse ’32, Norwalk
Corwin, H. R., Long Island ’42, Norwalk
Coscia, A. G., Cornell ’68, Norwalk
Cosentino, R. T., Georgetown ’62, New Britain
Coshak, M., Boston ’37, Waterbury
Costa, P. J., Yale ’55, Norwich
Cottiero, T., Yale ’26, Waterbury
Cottle, R. D., McGill ’60, Stamford
Couch, F. H., Yale ’30, Cromwell
Coughlin, F. R., Jr., Yale ’52, Stamford
Coulson, L. A., St. U. N. Y., N. Y. C. ’52, New London
Cousins, M. L., Vermont ’52, New Haven

Covey, S. S., St. U. N. Y. '70, New Haven
Covey, W. G., Physicians & Surgeons '62, Stratford
Cox, M. E., Cincinnati '36, Waterbury
Coyle, T. F., State Univ. N. Y. '63, Westport
Coyne, E. A., Queen's Univ. Belfast '63, Wethersfield (Tolland County)
Cozzolino, E. N., Harvard '33, West Haven
Craighill, M. D., Johns Hopkins '24, Southbury
Cramer, S. L., N. Y. Medical '41, Hartford
Crampton C. B., Yale '37, Middletown
Crane, J. E., Vermont '39, Stamford
Cranston, R. W., Jr., Albany '46, Norwich
Crary, H. I., Columbia '48, New Canaan
Craven, R. O., N. Y. Med. Coll. '62, Newtown
Crawford, J., Howard '59, Hartford
Crawford, W. O., Jefferson '59, Guilford
Creatura, J. A., Yale '58, Bridgeport
Creaturo, N. E., Boston '31, Trumbull
Crisafi, B. R., Stritch '63, Greenwich
Crispin, M. A., Temple '41, West Palm Beach, Florida (Hartford County)
Crombie, H. D., Jr., Tufts '61, Hartford
Cronan, T. L., Stritch '56, Trumbull
Cronin, M. T. I., Georgetown '65, New Haven
Cronin, R. J., N. Y. Medical '59, Hartford
Cronin, W. T., New York Med. Coll. '59, Norwalk
Crossman, W. F., Georgetown '65, Trumbull
Crothers, C. H., Yale '44, New Britain
Crowley, J. W., Catholic Univ. '54, New Britain
Crown, C. A., Illinois '47, New Canaan
Crowther, D. F. S., N. Y. Med. Coll. '64, Cromwell
Cruz, L. R., Nat'l. Univ. Columbia '66, New Haven
Csovanyos, L., Budapest '39, East Norwalk
Cuello, R. A., Santo Domingo Univ '53, Bridgeport (New London County
Cullen, C. F., Jefferson '48, Hartford
Cullen, J. R., Georgetown '36, Somers
Cullen, M. T., Woman's Med. Coll. Pennsylvania '56, West Hartford
Cullina, J. C., George Washington '48, Hartford
Cunin, B. M., Temple '62, Hartford
Cunningham, P. R., Yale '49, Guilford
Cunningham, R. D. M., Yale '30, Southbury (Fairfield County)
Curi, J. F. J., Yale '64, Torrington
Curis, F. T., Georgetown '56, Hartford
Curley, W. H., Jr., Cornell '38, Bridgeport
Curran, E. A., Albany '68, Putnam
Curran, J. J., Georgetown '61, Hartford
Curran, T. L., Boston U. '39, Hartford
Curtis, B. H., Columbia '36, Newington
Curtis, W. B., Columbia '34 Fort Lauderdale, Florida (New Haven County)
Cusanelli, G. N., Long Island '46, New Haven
Cushman, G. L., Tufts '43, Woodbury
Cushman, L. A., Harvard '24, West Hartford
Cusnir, M., Frankfurt '36, Meriden
Cutler, H. J., New York Med. Coll. '59, Waterbury
Cutler, H. S., St. Louis '37, Hamden
Cwik, R. A., Tufts '66, Guilford
Cyrus, R. W., St. U. N. Y. '65, Westbrook
Czaja, R. J., Tufts '53, Thompsonville
Czarsty, J. C., Georgetown '54, Oakville (New Haven County)
Czuczka, P., Albert Einstein '70, Westport

da Costa, J. F., Lisbon '55, Hartford
Dah, N. M., Grant Med. '67, Seymour (Litchfield County)
D'Aiuto, M. L., St. Louis '60, Bridgeport
Dake, P. D., Univ. Lausanne '62, Hartford
Dalal, B. J., G. S. Med. Coll. '64, East Norwalk
Dalal, B. J., Sheth G. S. '59, Bridgeport
Dalburg, L. A., Jr. N. Y. Medical '58, New Britain
Dale, P. W., Harvard '47, Greenwich
Dalgin, P. H., Buffalo '68, Stamford
Dallas, M., Boston '22, New Haven
D'Alotto, J. A., State Univ. N. Y. '63, Hartford
Daly, J. E., Tufts '44, Waterbury
Dambeck, A. B., Vermont '54, Tolland
D'Ambruoso, D. C., Columbia '36, West Hartford
Damiani, R. A., Tufts '33, Wolcott
D'Amico, M., Yale '31, New Haven
Danaher, T. H., Yale '57, Torrington
Danaher, T. J., Yale '28, Torrington
D'Andrea, F. H., Yale '29, Shoreham, Vermont (Fairfield County)
Danehower, R. L., Pennsylvania '65, Greenwich
D'Angelo, A. J., Rome '42, Southington
D'Angelo, D. A., Georgetown '55, Waterbury
D'Angelo, E. J., Rome '42, Southington
Daniels, D. S., Virginia '69, Waterbury
Daniels, E. H., Jr., Howard '52, Hartford
Daniels, J. C., Rochester '56, Danbury
Danielson, K. S., Harvard '65, Waterbury
Danigelis, J. A., Vermont '59, East Hartford
Dann, O. T., Yale '62, New Haven
Danoff, S. J., N. Y. U. '55, Stamford
Danyliw, J. M., Jefferson '47, East Hartford
Danzig, S. D., Lausanne '37, New Milford
D'Apice, J. P., St. Louis Un. '65, Fairfield
Darrow, J. E., Tufts '28, New Britain
Das, A., Univ. Calcutta '67, Bloomfield
Daukas, C., Yale '55, East Hartford
Daukas, N. J., N. Y. U. '47, Middletown
Dauphinais, R. M., St. Louis '61, Hartford
Dautrich, A. W., Yale '39, Litchfield
Davenport, J. J., Jr., Georgetown '59, Farmington
Davey, L. M., Yale '43, New Haven
David, N. D., Teheran '43, West Hartford
Davidson, A. C., New York '62, Derby
Davie, R. N., Louisiana '44, Waterbury
Davis, C. D., Johns Hopkins '39, New Haven
Davis, J. B., Kansas '33, Abingdon. Virginia (New Haven County)
Davol, R. T., Columbia '41, Greenwich
Dawe, E. L., London '48, Danbury
Day, E. J., N. Y. Med. Coll. '54, West Haven
Dayton, C. J., Temple '47, Cheshire
Dayton, N. A., Ohio '15, Clearwater, Fla. (Windham County)
Dean, M. A., Tufts '43, Bridgeport
Dean, P. M., Columbia '44, Greenwich
Dearani, A. C., Georgetown '53, Norwalk
DeBernardo, R. L., Georgetown '63, Bridgeport
DeBonis, G. M., Northwestern '66, Bridgeport
DeCarlos, K. A., Tufts '64, Hartford
deChabert-Ostland, J. G., Paris '34, Hartford
De Dios, V. K., Santo Tomas '64, New Haven
Deduk, N. T., Woman's Med. Coll. Pa. '54, Seymour
Deduk, V. J., N. Y. Med. Coll. '54, Seymour
'de Escobar, D. M., Un. Sao Paulo '54, Waterbury
deForest, G. K., Yale '32, New Haven
DeFusco, L. A., Georgetown '62, East Hartford
DeGraff, A. C., Jr., N. Y. U. 55, Hartford
deGroot, T. J., Nat'l. Un. Ireland '66, Norwich
DeJesus, C. P. V., Santo Tomas '62, West Haven
DeKlyn, W. B., Temple '41, Danbury
Delany, F., Columbia '45, Greenwich

Delgado-Fourzan, E., Mexico '43, Hartford
Delgrego, A. L., George Washington '30, New Haven
D'Elia, F. G., Georgetown '53, Fairfield
D'Elia, P. F., Tufts '44, New Haven
DeLibero, A. F., Rome '45, Bridgeport
Della Porta, J., Univ. of Naples '52, New Haven
Della Valle, L., Bologna '60, Hamden
Delligan, F. W., Georgetown '41. Hartford
Delohery, C. L., Temple '26, Lake Worth, Florida (Fairfield County)
DelPizzo, A., Bologna '57, New Haven
DeLuca, J. V., Georgetown '47, Bridgeport
DeLuca, V. A., Jr., Long Island Coll. Med. '48, Derby
DelVecchio, L. F., Georgetown '31, Stratford
DeMaio, J. T., Tufts '60, Hartford
Deming, A. S., Harvard '40. Hartford
Deming, C. D., Johns Hopkins '10, West Hartford
Deming, E. G., Harvard '40, Hartford
Demir, P., New York Med. Coll. '59, New Haven
Demko, R. M., N. Y. U. '54, Manchester
DeNegre, L. M., Seton Hall '60, Milford
DeNicola, M., Yale '54, Prospect
Dennen, P. C., Univ. Buffalo '49, Waterbury
Denton, C. R., Vermont '48, Hartford
DePasquale, F. L., Pennsylvania '26, Hartford
DePasquale, J. A., Pennsylvania '36, Hartford
DePetrillo, B., Bologna '54, Waterbury
DePonte, R. J., Yale '61, New Haven
Derby, J. H., McGill '60, New London
Deren, M. D., Syracuse '33, Bridgeport
Derkash, S. L., Hahnemann '40, Greenwich
Desmond, C. T., Boston U. '38, Bethesda, Maryland (Hartford County)
D'Esopo, J. N., McGill '31, Hamden
de Suto-Nagy, G. I., Royal Hung. '35, West Haven
de Suto-Nagy, I. K., Royal Hung. '15, New Haven
DeTora, A. M., Boston '40, Stafford Springs
Deutchman, R. F., Un. Berne '66, Stamford
Deutsch, J., Hahnemann '48, Hartford
Devarajan, O., Madras Med. Coll. '64, Newtown
Devenis, M. M., Yale '19, Santa Monica, California (New Haven County)
DeVille, D. B., Nat'l. Univ. Ireland '56, Middletown
DeWitt, E. N., Pennsylvania '17, Fairfield
Dey, F. L., Northwestern '44, New London
Dhandapani, B., Madras Medical '63, Rockville
Dhumale, S. H., G. S. Med. Coll. '65, Southington
Diamond, E. H., Breslau '32, Norwalk
Diaz, A., Mexico '56, Putnam
Diaz, O. B., Univ. Santo Thomas '68, Bristol
Dickinson, G. H., Vermont '46, Meriden
Dickinson, W. W., Pennsylvania '42, Yalesville
Dickson, C. M., Jefferson '66, Hartford
Dickson, H. M., Pennsylvania '58, New London
DiCorato, F., Bari '50, Norwalk
Diggs, A. M., Maryland '52, Waterbury
DiGiandomenico, A. T., St. Louis '41, Meriden
Dignam, B. S., Yale '35, Thompsonville
DiGrazia, P. V., Lausanne '61, Brookfield
DiLorenzo, S. F., Tufts '43, Waterbury
DiMauro, L. M., Georgetown '72, Cheshire
DiMeola, H. J., Albany '68, Rockville
Dimlich, H. K., Hahnemann '58, West Simsbury
Dineen, J. P., Cornell '55, Derby
Dinep, M., Bern '56, New Britain
Dingman, P. V., Columbia P. & S. '42, Waterbury
Dion, A. J., Tufts '28, Hartford
Dion, J. A., Georgetown '37, Hartford
DiPasquale, N. M., Univ. Bologna '69, Derby
Diskan, A. E., Temple '37, Manchester
Diters, E. N., Tennessee '48, Collinsville
Dobbs, W. G. H., Rochester '34, Portland, Oregon (Litchfield County)
Dobrow, R. J., Harvard '60, Hartford
Dobson, J. P., Columbia '36, Arcadia, Florida (Fairfield County)
Dock, D. S., Johns Hopkins '54, New Haven
Doctor, D. W., N. Y. Med. '52, Westport
Doctor, J. E., Downstate Med. Ctr. '59, Westport
Doctoroff, S. J., Columbia '64, New Britain
Dodd, A. H., Temple '48, Willimantic
Dodd, S. G., Temple '48, Willimantic
Doering, E. G., Bonn '53, Greenwich
Doering, R. W., Kansas '48, Bridgeport
Doerr, W. J., Erlangen '40, Hartford
Dogali, M., McGill '70, Bridgeport
Doheny, J. J., N. Y. Med. Coll. '56, Derby
Doherty, H. E., Georgetown '55, Bridgeport
Doherty, R. C., Vermont '47, West Hartford
Dolan, E. P., McGill '50, Bridgeport
Dolan, V. L., State Univ. New York '56, Blakeslee, Pennsylvania (Litchfield County)
Dolberg, H. M., Leiden '58, Westport
Dolinsky, A. H., N. Y. Med. School '51, New Haven
Dombrowski, E. H., St. Univ. New York '61, Stamford
Donadio, J. A., Yale '66, Middletown
Donnelly, J., Liverpool '38, Hartford
Donnelly, J. E., State Univ. New York '58, Bethany
Donnelly, J. F., State Univ. New York '58, Seymour
Donnelly, V. P., McGill '56, Bridgeport
Donnelly, W. A., Yale '34, Bridgeport
D'Onofrio, G. R., Jr., George Washington Univ. '67, Stamford
Donohue, S. M., Tufts '48, Windsor
Donovan, J. F., Harvard '52, Hartford
Donovan, T. J., Harvard '46, Hartford
Donovan, W. F., Boston '31, West Hartford
Dooley, J. A., St. Louis '55, Portland
Dorantes, J., Mexico '54, Old Lyme
Dorfman, G., Tulane '50, New Britain
Dorian, E., Maryland '37, New Britain
Dorison, E. E., Berne '56, Westport
Dorr, J. R., Yale '57, Darien
Dougherty, A. J. Univ Coll Galway '60, Hartford
Doura, M. E., Brussels Med. Sch. '70, Bristol
Dowaliby, J. M., II, Yale '67, New Haven
Dowling, K. V., New York '57, Hartford
Downer, M. C., Boston '29, West Hartford
Downing, L. C., Meharry '60, New Haven
Downs, E. F., Johns Hopkins '37, Bronxville, New York (Litchfield County)
Doyle, F. W., Yale '55, Willimantic
Dragon, R. E., Yale '66, New Britain
Drakonakis, A. C., Univ. Athens '61, Branford
Draper, T. F., Queen's '55, Newtown
Drennan, J. C., Cornell '61, Newington
Dressler, D. M., Chicago '64, New Britain
Dreyer, N. P., N.Y.U. '67, Stamford
Driscoll, A. J., Boston '47, Bristol
Drobnes, S., Freiburg '37, Norwich
Drury, R. W., Duke '64, Glastonbury
Dubissette, M. E., Howard Univ. '50, Stamford
Duboczy, J. B., St. Un. New York '67, Hartford
Dudac, T. W., Georgetown '33, Southington
Dudley, J. P., Minnesota '57, Los Angeles, California (Fairfield County)
Dudzic, A. L., Ottawa '58, Waterbury
Duers, J. A., Albany Med. '64, Willimantic
Dufort, R. T., Georgetown '64, North Grosvenordale
Dugas, J. A., Loyola '38, Bridgeport

Duke, M., N. Y. U. '54, Manchester
Duksa, W. J., Georgetown '37, West Hartford
DuLeep, K. S., Osmania Med. Coll. '57, Westport
Dunn, E., Upstate Med. Ctr. '51, Waterbury
Dunn, H., Amsterdam '58, Hartford
Dunn, M. L., N. Y. U. '43, New Britain
Dunne, M. J., Queen's Univ. Belfast '58, Alexandria, Virginia (Hartford County)
Dunsmore, R. H., Hahnemann '43, Hartford
Durkee, R. E., Jr., Harvard '36, West Hartford
Durrani, J., King Edward Med. Coll. '63, Enfield
Dushane, J. E., Tufts '36, Hartford
Dutton, R. S., McGill '63, Winsted
Duzmati, P. P., Jefferson '36, Bridgeport
Dworken, D. S., Boston '55, Bridgeport
Dwyer, F. D., Med. Coll. Pa. '67, New Haven
Dwyer, G. K., Rochester '43, Norwalk
Dwyer, R. D., Georgetown '67, Essex
Dwyer, R. T., Tufts '50, Granby
Dwyer, T. A., Georgetown '39, New Fairfield
Dwyer, W. J., Tufts '50, Granby
Dyer, C. E., Tufts '28, New London
Dyer, C. F., Cornell '47, New London
Dyer, R. H., Jr., Cornell '63, Waterbury
Dzubaty, M., Buffalo '48, West Haven

Eadie, F. S., Tufts '48, Norwich
Eagan, E. C., Albany '43, Hartford
Earle, L. H., Jr., Tufts '50, West Hartford
Eaton, H. E., Vermont '49, Pomfret
Ebbert, A., Jr., Virginia '46, New Haven
Ebers, T. M., Nebraska '31, Sedona, Arizona (Hartford County)
Echental, A. A., Geneva '63, Stamford
Eckels, H. S., Hahnemann '48, Bridgeport
Eckert, G. R., Tufts '33, Newtown
Eckhart, K. L., Temple Univ '67, Portland
Eckhardt, W. F., Jr., N. Y. U. '53, New Canaan
Eddy, J. R., Vermont '53, Manchester
Edelson, M. H., Chicago '55, New Haven
Edelstein, B. L., Hahnemann '60, Bloomfield
Edelstein, S. W., Hahnemann '57, Hartford
Edgar, E. E., Tufts '61, East Lyme
Edgar, M. S., Jr., Columbia '59, Norwich
Edkin, R. E., Howard '59, Hartford
Edmonstone, W. M., Rochester '43, Mystic
Edson, D. H., Vermont '42, Danbury
Edson, R. C., Jefferson '31, St. Augustine Shores, Florida (Hartford County)
Edwards, L. E., George Washington '47, Fairfield
Egee, J. B., Hahnemann '34, Newtown
Eguia, J. M., Nat'l. Univ. Cordoba '66, Waterbury
Ehrlich, E. L., Bern '58, West Hartford
Ehrlich, M. C., N. Y. Med. Coll. '66, Willimantic
Eilbergas, M., Zurich '41, Windsor Locks
Eimas, A., Tufts '30, Bridgeport
Eisen, S. L., Albany '66, Waterbury
Eisenberg, J. H., State Univ. N. Y. '62, Bridgeport
Eisenberg, S. E., Rochester '39, New Britain
Elazegui, R. A., Santo Tomas '69, Bloomfield
Elcaness, H., Hahnemann '40, Southbury
Elder, W. J., Charing Cross Hosp. '55, Stamford
Elgosin, R. B. McGill '40, Milford
Eliasoph, J. L., N. Y. U. '49, Stamford
Eliasoph, J., N. Y. U. '49, Stamford
Elisofon, R. M., S.U.N.Y. '67, Ridgefield
Elliott, F. G., Jr., Howard '40, Bridgeport
Elliott, J. R., Boston '32, Canaan
Elliot, K. G., Tufts '26, West Hartford
Ellis, G. D., Albany '50, Waterford
Ellis, L. G., Jefferson '20, West Hartford
Ellis, W. A., Jefferson '40, Hartford
Ellison, L. H., Boston '64, Hartford
Ellison, M. M., Rochester '43, New London
Ellrich, D. L., Jefferson '28, Westport
Ellzey, W. J., Tulane '64, Willimantic
Elser, J. P., Georgetown '56, Naugatuck
Ely, J. G., Harvard '23, Lyme
Emery, F. M., Columbia '29, Guilford
Emmel, R. C., Cornell '45, West Hartford
Eng, G. O., Yale '49, Stamford
Engel, H. P., Durham, England '55, Bridgeport
Engelke, H. A., N. Y. Med. Coll. '59, Gales Ferry
Enowitch, B. I., Univ. Geneva '66, Hartford
Enriquez, A. R., San Marcos '63, New Britain
Ephraim, P. D., Albert Einstein '65, Orange
Epstein, B., Vienna '36, Danbury
Epstein, E. J., N. Y. Med. Coll. '45, Stamford
Epstein, J. I., Yale '43, Middletown
Erami, M., Geneva '56, Bristol
Eras, P., S. U. N. Y. '60, Bridgeport
Erba, S. M., Hahnemann '45, Woodbridge
Erdelyi, P. G., Pazmany Peter '41, Stamford
Ergin, M. T., Istanbul '50, Hartford
Erichson, R. B., Cornell '60, Stamford
Errera, P., Harvard '53, West Haven
Erickson, G. C., Tufts '31, Rockville
Errico, A. V., Naples '59, North Haven
Escobar, S., Siena, Italy '70, Bridgeport
Esdaile, W. W., Meharry '62, New Haven
Esfahanian, S., Tehran '65, Norwich
Eslami, M. S., Tehran '57, Waterbury
Esposito, J. J., Columbia '37, Bridgeport
Esposito, M. J., Boston '49, Meriden
Essack, J. Y., Royal Coll of Surgeons '68, Manchester
Estela, J. A., Un. Santo Tomas '64, Bristol
Estrada, J. A., Santo Domingo '54, New Milford
Etkind, E. L., Albert Einstein '62, New Haven
Etkind, M. G., Maryland '33, New Haven
Evans, D. T., Vermont '62, Newtown
Evans, J. E., Mississippi '68, Hartford
Evans, T. S., Columbia '21, New Haven
Evarts, J., Columbia '29, Millerton, New York (Litchfield County)
Exconde, F. V., Jr., Far Eastern Univ. '62, Danbury

Fabbri, R., Jr., Yale '64, New Haven
Fabrizio, T. I. J., Helsinki '57, Norwalk
Fabro, J. A., Tufts '37, Torrington
Fagan, F. J., Boston '38, New London
Fagan, F. X., Cornell '33, Wethersfield
Fahy, R. A. Royal Coll. of Surg. Ireland '68, Hartford
Faiaz, E. K., Tehran '51, Hartford
Fairlie, C. W., Jr., Columbia '41, Hartford
Fakkel, M. J., Tufts '50, Stamford
Falk, M., Lausanne '61, Naugatuck
Falk, S., N.Y.U. '54, Bristol
Falkenstein, R. J., Yale '69, Danbury
Falsone, J. J., Long Island '47, Norwalk
Fand, R., N. Y. U. '62, Danbury
Fanning, J. B., Nat'l. Univ. Ireland '57, North Haven
Fanslow, A. W., New York '55, Stratford (New Haven County)
Farber, L. R., S. U. N. Y. '65, New Haven
Farland, V. L., Montreal '25, Fort Lauderdale, Florida (Hartford County)
Farmer, D. A., Harvard '42, New Haven
Farraye, J. J., Univ. of Bologna, Italy '70, Avon
Farrell, H. F., N. Y. Medical '54, Torrington
Farrell, J. E., Georgetown '52, Stamford

Farrell, R. F., Vermont '42, Stamford
Fasanella, R. M., Yale '43, New Haven
Fasano, L. A., New York '55, New Haven
Fauliso, R. J., Tufts '60, Hartford
Favata, J., Lausanne '58, Waterbury
Fay, W. J., Harvard '14, Hartford
Fazzari, P. J., Albany Med. Coll. '67, Newington
Fazzone, A. C., Seton Hall '61, Bridgeport
Fazzone, P. R., Yale '58, New Haven
Fearon, H., St. Univ. New York '27, Washington
Fearon, R. E., Harvard '61, New Haven
Federico, F. N., Jefferson '65, Bridgeport
Federico, J. V., Harvard '66, Madison
Feeney, T. M., Boston '36, West Hartford
Feierstein, S., Zurich '63, Huntington
Felber, J. H., Vienna '45, West Hartford
Felder, E. A., Jefferson '48, Norwalk
Feldman, M. G., Boston '58, Bridgeport
Feldman, P., Med. Coll. Georgia '61, Hartford
Feldman, R. A., Albert Einstein '66, Waterbury
Feldman, S. M., Boston '54, Bridgeport
Feller C. W., New York '67, Hartford
Fenaughty, R. W., St. Univ. N. Y. '57, New Britain
Fenelon, E., Faculty of Medicine, Haiti '62, Hartford
Fenn, J. E., Yale '61, New Haven
Fenney, P. W., Tufts '31, Newington
Fenster, M., S.U.N.Y. '63, Norwalk
Fenton, R. H., Lausanne '57, New Haven
Feola, B. J., Maryland '60, Branford
Ferando, L. J., Bologna '62, New Haven
Ferguson H. K., N. Y. U. '32, Waterford
Ferguson, J. F., Jr., Yale '40, Wallingford
Fernand, E. G., Yale '55, Danbury
Feroleto, G. J., Vermont '59, Bridgeport
Ferranti, R. D., Rome '52, Hamden
Ferrari, D. A., Columbia '63, Manchester
Ferraro, R. W., Creighton '63, Waterbury
Ferrero, V., Catholic Univ. Rome, 68, Hartford
Ferris, J., Columbia '43, New Milford
Fessel, J. M., Yale '63, New Haven
Feuer, C. R., New York Univ. '62, Guilford (Fairfield County)
Feuer, P. M., N. Y. Med. Coll. '70, Fairfield
Fezza, A. J., New York '65, Hamden
Fezza, M. L., New York '54, Hamden
Fialkoff, R., Havana-Cuba '48, Manchester
Fiducia, J. P., Queen's Un. Belfast '65, Middletown
Fieldman, A., Tufts '51, Hartford
Fierberg, A. A., Pittsburgh '49, Hartford
Fierman, L. B., Western Reserve '46, Portland (New Haven County)
Figueroa, F. J., Mexico '50, Enfield
Filer, H. L., Jr., Yale '46, New Haven
Filewicz, S. P., N. Y. Med. Coll. '59, New Britain
Filson, R. M., Queen's '15, West Hartford
Fincke, C. L., Harvard '28, Stamford
Fine, B., Jefferson '32, Stamford
Fine, J., Pennsylvania '31, Stamford
Fine, N. L., Downstate Med. Ctr. '64, Derby
Fink, H. D., Louisville '54, Milford
Fink, M. E., St. Univ. New York '57, Guilford
Finkelstein, H. I., Washington Univ. '61, New Haven
Finkelstein, J., Un. Pennsylvania '60, Sharon
Finkelstein, W., Harvard '34, Waterbury
Finlay, J. R., Hahnemann '46, Greenwich
Finn, A. J., Bowdoin '21, Waterbury
Finn, A. J., Jr., Jefferson '60, Torrington
Finn, F. W., Columbia '38, Greenwich
Finn, J. E., Georgetown '64, Waterbury
Finnie, J. N., Un. Alberta '63, Torrington
Finseth, F. J., Harvard '66, New Haven
Fischbein, C. A., S. U. N. Y. '70, Waterbury
Fischbein, F. I., N. Y. Med. Coll. '63, Middletown
Fischer, D. G., Vermont '57, Hamden
Fischer, D. S., Harvard '55, New Haven
Fischer, J. J., Harvard '61, New Haven
Fischl, R. A., Durham, England '51, Danbury
Fishbone, G., Univ. Sheffield '58, Hamden
Fisher, L. C., Columbia '55, Stamford
Fisher, M., L. I. Coll. Hosp. '20, Greenwich
Fisher, R. L., Columbia '40, Sharon
Fisher, R. L., Yale '59, Hartford
Fisher, W. H., Jr., Tufts '58, Waterbury
Fishman, R. S., Geneva '56, Hartford
Fiskio, P. W., Yale '27, East Haven
Fitzgerald, J. R., Yale '57, East Hartford
Fitzgerald, T. S., Vermont '68, Stamford
Fitzpatrick, E. E., Maryland '15, St. Petersburg, Florida (New Haven County)
Fitzpatrick, E. J., McGill '42, New Haven
Fitzpatrick, W. F., Cornell '38, Norwalk
Flagg, J. A., Temple '51, Bridgeport
Flagg, S. V., Columbia '62, New Haven
Flaherty, C. V., Yale '10, West Hartford
Flaherty, M. V., Georgetown '43, Hartford
Flamm, G. H., Long Island '43, New Haven
Flanagan, E. P., Univ. Coll. Dublin '58, Manchester
Flanagan, J. A., Georgetown '67, Middletown
Fleck, S., Harvard '40, New Haven
Fleisch, M. C., Tufts '40, Hartford
Fleisher, P., Western Ontario '44, Bridgeport
Fleisher, P. R., Basle '58, New London
Fleming, R. J., Tufts '56, Stamford
Flemister, A. S., Howard '54, Bridgeport
Flescher, R., Harvard '61, Hartford
Fletcher, R. G., Harvard '53, Colebrook
Flint, J. F., Columbia '66, Waterbury
Floch, M. H., New York '56, Norwalk
Flom, L., N. Y. U. '50, Fairfield
Flores, J. C., Cordoba Nat'l. Un. '60, Ansonia
Flores, P. G., Un. Santo Tomas '63, Bristol
Flores, S E., Un. Nuevo Leon '68, Meriden
Flynn, C. T., Jr., Yale '43, Meriden
Flynn, E. J., Long Island '43, Norwalk
Flynn, F. J., Virginia '43, Newington
Flynn, H. A., Yale '27, New Haven
Flynn, J. B., Jefferson '44, Meriden
Flynn, J. D., Georgetown '64, Willimantic
Flynn, J. H., Yale '45, New Haven
Flynn, T. G., Georgetown '59, New Canaan
Flynn, W. H., Maryland '16, Bristol
Fogel, D. H., Duke '38, Greenwich
Fogelman, H., Lausanne '52, Stamford
Fogg, L. B., Washington '60, East Hartford
Foley, F. X., Boston '34, Bridgeport
Folk, J. J., Georgetown '65, New Britain
Fons, A. L., III, Yale '57, West Hartford
Foohey, F. C., Laval '43, Hartford
Foote, F. M., Yale '33, Wethersfield
Forbes, J. D., Temple '64, Southbury
Force, B. R., N. Y. Med. Coll. '42, Groton
Ford, J. R., Albany '64, Windsor
Forman, B. H., Downstate '68, New Haven
Forman, J. B., Yale '39, New Haven
Forman, M. A., Un. Wisconsin '64, Stamford
Formica, J. J. Tufts '55, New Britain
Fornshell, R. P., Harvard '52, Danbury
Fortin, V. L., Jr., Howard '59, Hartford

Foss, B. A., Boston '54, New London
Foster, J. H. Columbia '54, Hartford
Foster, J. H., Pennsylvania '17, Waterbury
Foster, K. W., Jr., Tufts '57, West Hartford
Fote, J. J., New Jersey '70, West Hartford
Fournier, R. E., Tufts '50, New Haven
Fowler, G. A., Columbia '40, Sharon
Fowler, R. N., Columbia '34, Ramsey, New Jersey (New London County)
Fox, B. M., Tufts '55, Hartford
Fox, E. F., N. Y. Med. Coll. '58, Bristol
Fox, G. G., Harvard '34, Meriden
Fox, H. J. Hahnemann '52, Bridgeport
Fox, J. C., Jr., Johns Hopkins '20, West Hartford
Fox, M., Geneva '60, Stamford
Fox, M. I., Cornell '53, Milford
Fox, S., Med. Coll. Va. '72, Madison
Foye, G. J., Un. Coll. Dublin '65, Brookfield
Fraknoi, J., Pazmany Peter Univ. '34, Wallingford
Francescon, S. D., Georgetown '68, Meriden
Francis, H. L., Howard '48, Waterbury
Franco, J. E., Tufts '40, Hartford
Frank, H. D., Harvard '50, Bridgeport
Frank, L. M., Pennsylvania '45, West Hartford
Frank, R. D., U.C.L.A. '65, Greenwich
Frankel, S. A., Duke '46, New Haven
Franklin, D. N., Columbia '56, Wilton
Franklin, J. B., New Jersey '61, Hartford
Franklin, M., Maryland '56, Darien
Franz, A., II, Tufts '57, Meriden
Frazier, W. H., Yale '69, New Haven
Frechette, E. J., Jr., N. Y. Med. Coll. '47, New Haven
Fredericks, E. J., Cornell '62, Hartford
Frederickson, R. W., N. Y. Med. Coll. '51, Hartford
Freedman, J. K., Tufts '55, New Haven
Freedman, M., Tufts '32, New Haven
Freedman, M. E., N. Y. Med. Coll. '47, Hartford
Freehill, P. J., Chicago '65, New Haven
Freeman, D., Yale '24, New Haven
Freeman, J. J., Temple '33, Storrs (Windham County)
Frenkel, H. H., Boston '52, Bridgeport
Freymann, J. G., Harvard '46, Farmington
Friedberg, I. H., Tufts '37, Newington
Friedman, C. R., Cornell '46, New Haven
Friedman, I., Yale '33, New Haven
Friedman, M. A., Univ. Michigan '63, Stamford
Friedman, N. H., Tufts '33, Stratford
Friedman, R. M., Puerto Rico '67, Willimantic
Friedman, S. I., Tufts '68, Meriden
Friedmann, K. R., Hahnemann '57, Old Lyme
Friel, P. B., National '50, West Hartford
Friend, A. E., Queen's '22, Manchester
Friend, H. B., Queen's Univ. Canada '59, Hartford
Fritz, H. L., N. Y. Med. Coll. '57, Meriden
Fromm, S. M., Texas '48, Bridgeport
Frost, L. H., Vermont '13, Forestville
Frumkin, S., Wisconsin '71, Westport
Fuhrmann, J. M., Long Island '43, Woodbridge
Fulchiero, E. A., Turin '40, New London
Fuldner, R. V., Columbia '33, New Haven
Fuller, L. G. A., Un. Heidelberg '65, Waterbury
Fuoco, L. A., Buffalo '42, Noroton
Furniss, W. E., Tufts '40, Bristol

Gabrielle, F. M., Jr., Bologna '64, West Hartford
Gacso, W. J., Tufts '62, Bridgeport
Gaffney, J. J., Loyola '30, Danbury
Gaffney, R. E., N. Y. Med. Coll. '52, Fairfield
Gagliardi, J. M., Jr., Jefferson '60, Derby
Gaines, G. A., Women's Med. Coll. '51, Waterbury
Gahm,, N. H., Tufts '61, Hartford
Gaito, R. A., Yale '58, New London
Gaintner, J. R., Johns Hopkins '62 New Britain
Galasyn, V. D., Un. Tennessee '65, Canterbury
Galen, J. H., Long Island '42, Derby
Galen, M. A., Hahnemann '67, Hartford
Galinsky, D., Tufts '35, Hartford
Gallivan, J. N., Tufts '35, Wethersfield
Gallo, E. P., Jefferson '65, Winsted
Gallo, F., Jefferson '34, Winsted
Gallo, G. A., N. Y. Med. '63, Greenwich
Gallo, S. J., Maryland '57, Middletown
Galloway, J. A., Vanderbilt '62, Torrington
Galloway, S., Bowman Gray '65, New Haven
Gallup, J. W., Tufts '55, Sharon
Galvin, J. R., Tufts '64, Farmington
Gambarini, A. J., Buenos-Aires '50, Hartford
Gammill, J. F., Columbia '48, Darien
Gandel, P. N., Tufts '64, Bloomfield
Gandy, R. A., Virginia '27, Stamford
Ganguli, P. C., Calcutta Un. '60, Middletown
Garb, A. E., St. Univ. New York '55, Cos Cob
Gardner, C. W., Jr., Chicago '48, Fairfield
Gardner, S. M., Colorado '32, Fairfield
Gargano, P. A., Loyola-Stritch '68, Bridgeport
Gariepy, J. A., Yale '54, Bridgeport
Garofalo, G. A., Louvain '58, Bridgeport
Garofalo, M. L., Naples '35, East Haven
Garrell, M., Vermont '52, Fairfield
Garrity, J. D., Georgetown '57, Monroe
Garver, E. M., Georgetown '70, Bridgeport
Gates, W. L., Syracuse '44, Wallingford
Gaudio, A. R., Yale '63, Hartford,
Gaynes, P. M., St. Univ. New York '63, Fairfield
Gaynor, E. B., Downstate Med. Sch. '66, Norwalk
Geanuracos, G. J., Long Island '44, Bridgeport
Geary, F. L., Georgetown '63, Hartford
Geary, W. J., Georgetown '64, Hartford
Gedeon, P. E., Beirut '45, Waterbury
Geer, E. T., Temple '44, Stamford
Geetter, A. L., Pennsylvania '67, Bloomfield
Geetter, D. M., Jefferson '59, Hartford
Geetter, I. S., Jefferson '29, Hartford
Gefter, W. I., Univ Penn. '39, Stamford
Geha, A. S., Am. Un. Beirut '59, New Haven
Geiser, F. M., Cincinnati '41, Middletown
Gencarrelli, A. F., Buffalo '39, Branford
Gens, J. P., Yale '37, Norwalk
Gentile, A. L., Boston '29, New Haven
Genvert, H., Yale '36, Norwalk
Geoghegan, J. W., New York Med. Coll. '50, New Britain
Georgakis, N. G., N. Y. Med. Coll. '58, Norwalk
George, A. B., Athens '54, Hartford
George, R. C., Yale '66, Norwalk
Gerber, E., Jr., N. Y. Med. Coll. '51, Naugatuck
Gerber, J. S. Heidelberg '65, Hartford
Gerber, W. H., Heidelberg '65, West Hartford
Gerent, W. P., Hahnemann '47, West Hartford
Gerity, P. J., South Carolina '46, New London
German, J. N., Yale '62, New London
German, W. J., Harvard '26, New Haven
Gerow, G. H., Toronto '24, Westport
Gersten, S. P., Colorado '67, Middletown
Gerster, J. W., Columbia '44, Greenwich
Gerz, H. O., Dusseldorf '53, Middletown
Getnick, R. A., Yale '68, Waterbury
Gettings, J. A., Jefferson '16, New Haven
Gevalt, F. C., Jr., Columbia '40, Sharon
Gfeller, R. J., Georgetown '58, Thompsonville

Ghabrial, S. L., Ein-Shams Un. ’53, Manchester
Ghaussy, A. A., Hamburg ’62, Portland
Ghazi-Saidi, R., Univ. Tehran, Enfield (Tolland County)
Ghofrany, F. N., Pahlavi Un. ’65, Hamden
Ghofrany, S., Yale ’72, Hamden
Gianetti, C. D., S.U.N.Y. ’65, Bridgeport
Gianetti, D., Louvain ’72, Bridgeport
Gianfranceschi, G. R., McGill ’48, Danbury
Giangrasso, A. E., Creighton ’58, Trumbull
Giardi, L. P., Vermont ’48, Hartford
Giardina, D. D., N. Y. Med. Coll. ’50, Norwalk
Giarnella, E., Modena ’53, Hartford
Gibbons, J. M., Jr., Georgetown ’58, Hartford
Gibney, R. A., Univ. Bologna ’69, Waterbury
Gibson, D. W., George Washington Univ. ’71, New Haven
Gibson, F., McGill ’41, New Haven
Gibson, F. D., Syracuse ’35, Hartford
Gibson, L. W., Tufts ’62, Willimantic
Giddings, J. C., Vermont ’43, Meriden
Giertz, W. E., Georgetown ’50, New Britain
Gilbert, R. K., Cambridge ’54, Waterbury
Gildea, M. A., Buffalo ’24, Bridgeport
Giles, N. W., Vermont ’21, Stamford
Gilgore, S. G., Jefferson ’56, Darien (New London County)
Giligian, J., St. Univ. N. Y. ’53, Hartford
Gill, A. J., N. Y. S. U. ’62, Fairfield
Gill, N. P. Georgetown ’52, Bridgeport
Gillcash, R. S., Yale ’61, Willimantic
Gilman, R. L., Harvard ’29, Storrs (Windham County)
Gilmartin, D., Queen’s Univ. Belfast ’56, Norwich
Giobbe, M. E. Tufts ’29, Torrington
Gionfriddo, J. R., Georgetown ’51, West Hartford
Giosa, N. A., Boston ’52, Wethersfield
Gipstein, E., Jefferson ’31, New London
Giuliano, L. A., Tufts ’32, Norwalk
Giuliano, S., Tufts ’30, Hartford
Given, J. B., Cornell ’50, Hartford
Gladstone, T. M., Vermont ’68, New Britain
Glaser, G. H., Columbia ’43, New Haven
Glaser, W., Tufts ’38, New Haven
Glass, H. L., Vanderbilt ’49, Bristol
Glass, M. K., Harvard ’55 Bridgeport
Glass, W. I., Cornell ’38, Bridgeport
Glasser, M., New York St. Univ. ’61, Willimantic
Glasser, S. T., McGill ’28, Niantic
Glassman, H. H., Indiana ’56, Hartford
Glassman, I., N. Y. Med. Coll. ’51, New Haven
Glassman, R. M., Univ. Aberdeen ’69, Waterbury
Glaubman, H. M., Yale ’27, Hartford
Glazer, M., Tulane ’22, New Haven
Glenn, J. S., Cornell ’65, Torrington
Glenn, W. W. L., Jefferson ’38, New Haven
Glenney, C. C., Tufts ’52, Norwich
Glickman, M. G., Washington Un. ’63, New Haven
Glike, F. P., Yale ’41, Meriden
Gloetzner, H. J., Temple ’41, Norwalk
Glucksman, M. L., Washington ’59, Danbury
Glueck, B. C., Harvard ’38, Hartford
Glugover, D. B., Chicago ’62, Willimantic
Goco, E. S., Un. Santo Tomas ’62, Waterbury
Godar, T. J., Tufts’ 56, Hartford
Godfried, M. S., Yale ’36, New Haven
Godlash, K. M., Georgetown ’61, Hartford
Godley, J. A., Yale ’62, Orange
Goehausen, M. C., St. Louis ’47, Westport
Goerner, J. R., Yale ’43, Watertown
Goetcheus, J. S., Western Reserve ’64, Essex
Goetsch, J. B., Rochester ’38, New Haven
Goffinet, S. B., Johns Hopkins ’60, Woodbridge
Gofstein, R. M., Yale ’51, Stamford
Golbey, R. B., N. Y. U. ’49, Stamford
Gold, B., State Univ. New York ’57, Hartford
Gold, H., Lausanne ’60, Hartford
Gold, H. C., Zurich ’53, Newington
Gold, L., Vienna ’36, Stamford
Gold, L. H., N. Y. Med. ’32, Hartford
Goldberg, I. S., Creighton ’33, Torrington
Goldberg, M. H., Albany ’61, Hartford
Goldberg, M. M., Ottawa ’54, Danbury
Goldberg, P. A., New York Med. Coll. ’67, Stamford
Goldblatt, J. S., Med. Coll. of Virginia ’67, Norwich
Goldblatt, P. B., Pennsylvania ’65, New Haven
Golden, A. J., Yale ’50, Wethersfield
Goldenberg, A. Boston ’54, West Hartford
Goldenberg, I. S., Boston ’51, New Haven
Goldenberg, J. J., Dalhousie ’26, Hartford
Goldenberg, P. T., Boston ’46, Hartford
Goldenring, H., N. Y. U. ’49, Branford
Goldenthal, C., Yale ’44, Hartford
Goldenthal, S., Yale ‘51, New Haven
Goldfarb, J., Texas ’50, Stamford
Goldfarb, S. L., Milan ’38, Stamford
Goldman, A., Zurich ’53, Danbury
Goldman, G., Yale ’10, Woodmont
Goldman, P. H., Geneva ’57, Hartford
Goldstein, J., Med. Acad. Lodz ’48, New Haven
Goldstein, L. H., Univ. Penn. ’68, Danbury
Goldstein, P. S., Yale ’49, New Haven
Goldstein, W. B., Washington ’61, Danbury
Goldys, F. M., Tufts ’26, Danbury
Golia, U. V., Long Island ’45, New Haven
Golkar-Sisani, F., Teheran ’65, Manchester
Golino, E. F., Rochester, ’36, East Hartford
Golub, G. R., Tufts ’60, Hartford
Good, P. S., Yale ’45, Waterbury
Good, R. C., Columbia ’42, Waterbury
Goodhue, P. A., Vermont ’58, Stamford
Goodman, A. H., State Univ. N. Y. ’57, New Haven
Goodman, D. T. H., Un. Santo Tomas ’58, Meriden
Goodman, J. L., Ottawa ’60, Meriden
Goodman, S. E., Cornell ’53, Norwalk
Goodrich, A., Indiana ’41, Bridgeport
Goodrich, I., Med. Coll. Georgia ’64, New Haven
Goodrich, W. J., Albany ’39, Bridgeport
Goodyer, A. V. N., Yale ’42, New Haven
Gordon, B. D., Maryland ’51, Bridgeport
Gordon, E., Vienna ’35, Middletown
Gordon, M. E., Yale ’46, New Haven
Gordon, R. S., Columbia ’46, New Haven
Gordon, Y., Tufts ’48, West Hartford
Gorham, G. V., Michigan ’30, Norwalk
Gorin, M., Rochester ’60, Middletown
Gorman, A. T., Albany ’57, Hartford
Gorman, D. J., Georgetown ’62, Hartford
Goss, J. D., Jr., Southern California ’49, Kent
Gossart, R. M., Univ. Louvain Belgium ’60, Bridgeport
Gosselin, A. G., Tufts ’53, Jewett City
Gossling, H. R., Temple ’47, Hartford
Gott, P., Tulane ’62, Lakeville
Gottlieb, F. I., Johns Hopkins ’62, New Haven
Gottlieb, M. B., N. Y. U. ’64, Meriden
Goubran, M., Ein-Shams Un. ’62, West Haven
Gould, M. M., Tufts ’31, Hartford
Gourlie, H. W., Harvard ’31, Thompsonville
Gouterman, I. H., S.U.N.Y. ’71, New Haven
Goyette, R. P., Georgetown ’61, Putnam
Grace, T. W., Georgetown ’63, Hartford
Graf, T. M., Cambridge, England ’70, Hartford
Graffagnino, P. N., Tulane ’51, West Hartford

Graham, A. J., Tufts '60, New Haven
Graham, J. R.. Pennsylvania '61, Branford (Hartford County)
Graham, R. A., Univ. Coll., Dublin '55 Mystic
Graham, R. G., California '69, Ledyard (Windham County)
Gram, P. B., Rochester '52, Manchester
Granger, D. P., Univ. Pennsylvania '54, Bridgeport
Grann, V. R., N. Y. Med. Coll. '62, Stamford
Granoff, M. A., Chicago '37, New Haven
Grant, J. M., Columbia '49, Bridgeport
Grant, R. F., Albany '38, Cromwell
Granville, N. B., State Univ. N. Y. '52, Windsor
Gratz, C. M., Toronto '23, Port Washington, New York (Fairfield County)
Grauer, L. E., Yale '68, New Haven
Gray, C. H., Stanford '48, Old Greenwich
Gray, P. H., Columbia '62, Stamford
Gray, P., Tulane '37, Portland
Graydon, R. J., II, Albany '62, Hartford
Grayer, D. I., Albert Einstein '64, Bridgeport
Grayson, D. R., New Jersey '63, Hartford
Graziano, A., Rome, Italy '49, New Haven
Green, R. H., Johns Hopkins '38, Madison (Middlesex County)
Greenberg, A., Long Island '32, Old Saybrook
Greenberg, A. D., Rochester '60, New Haven
Greenberg, I. M., New York '55, Waterbury
Greenberg, R. D., Univ. of Michigan '67, Vernon (Hartford County)
Greenblatt, H. J., Vermont '36, New Britain
Greene, G. S., Harvard '39, Hartford
Greene, L. A., Boston '60, Norwich
Greenfield, M., N. Y. U. '50, Danbury
Greengold, J. B., St. Louis '73, Naugatuck
Greenhouse, B., Yale '21, New Haven
Greenhouse, H. R., N. Y. Med. Coll. '44, Hamden
Greenspan, R. H., Syracuse '48, New Haven
Greenwald, W. F., Johns Hopkins '50, New Haven
Greiner, G. F., Vanderbilt '40, Kent
Grendon, D. A., Harvard '28, Sharon
Gretsch, B. J., Pennsylvania '73, Newtown
Grey, N. J., S. U. N. Y. '64, Hartford
Griffin, D. P., Jefferson '14, Bridgeport
Griffin, J. E. C., Dublin '55, Norwich
Griffin, W. M., St. Un. New York '62, Greenwich
Griffith, J. J., St. Un. New York-Downstate '52, Norwalk
Griffiths, H. L., Guy's Hosp. '53, Stamford
Grigas, J. E., Tufts '36, Basking Ridge, New Jersey (Fairfield County)
Grillo, W., Rochester '38, Willimantic
Grinsell, H. J., Tufts '54, Danielson
Griswold, D. M., Boston '65, Willimantic
Griswold, E. M., Yale '32, Glastonbury
Griswold, M., Yale '25, Old Lyme
Griswold, M. T., Tufts '05, Torrington
Gritzmacher, R. O., Wisconsin '63, Old Saybrook
Grody, M. H., Pennsylvania '46, Hartford
Gromults, J. M., Jr., New York Univ. '58, Stamford
Gross, E. M., N. Y. U. '59, Farmington
Gross, N. D., Creighton '49, Hartford
Grossman, B. A., Georgetown '59, Norwalk
Grossman, D. S., Un. Ghent '71, Manchester
Grossman, E. T., Albert Einstein '63, Fairfield
Grossman, J. H., Rochester '41, Bridgeport
Grossman, R. S., St. Louis '52, Newtown
Grundy, G. W., Rochester '70, Orange
Gruskay, F. L., Yale '54, Milford
Gryboski, R. A., Yale '65, New Britain
Gryboski, W. A., Yale '56, New Britain
Gryce, W. I., N. Y. Med. Coll. '44, Danbury
Grycz, H. J., St. Andrews '59, Cheshire
Gualtieri, M. V., Tufts '43, Waterbury
Guardino, J. J., Vermont '62, Manchester
Gudernatch, G. S., Cornell '39, Sharon
Guida, F. P., Yale '34, New Haven
Guigui, A., Univ. Paris '53, Ridgefield
Guigui, C. B., Dusseldorf '53, Ridgefield
Guillette, W., Tufts '53, Hartford
Guinan, D. A., Vermont '48, Manchester
Gulash, J. R., Marquette '40, Bridgeport
Gulliver, A. G., Jr., New York Med. Coll. '59, Torrington
Gundersen, C. A., Boston '63, Glastonbury
Gura, G. M., Loyola '31, Southington
Gurwitt, A. R., Yale '57, New Haven
Gurwitz, J., Tufts '38, Hartford
Guss, L., Oklahoma '41, Norwich
Gustafson, W. E., Yale '49, East Hartford
Gutierrez, T. G., Univ. Philippines '58, Meriden (Hartford County)
Gutkowski, T. J., Albany '64, South Windsor
Guttenberg, I., Yale '60, Meriden
Guttman, T., Prague '39, Bridgeport
Guzman, P. S., Philippines '61, Wallingford

Haber, M., N. Y. Med '63, Rockville
Haberlin, C. E., Med. Coll. Va., '24, Stratford
Habib, N. I., Univ. of Cairo '55, Derby
Hackbarth, C. J., Louvain '64, Old Lyme
Haddad, F. M., Yale '43, Ansonia
Haghighat, A., Tehran '55, Bridgeport
Haight, B., State Univ. N.Y. '71, Vernon (Middlesex County)
Haine, J. W., Albany '43, Stamford
Haines, H. L., Johns Hopkins '39, New London
Haines, R. W., Jefferson '46, West Hartford
Hajek, J. V., Harvard '65, Sharon
Haksteen, J. J., Georgetown '58, Hartford
Hale, S. D., Columbia '65, Willimantic
Hale, V. A., Texas '22, Sarasota, Florida (New London County)
Haley, J. C., Yale' 40, Hamden
Hall, F. M., N.Y. Med. Coll. '56, Hartford
Hall, M. I., Edinburgh '34, Bristol
Hall, M. N., Albany '48, Niantic
Hall, W. A., Harvard '56, Middletown
Hall, W. C., Pennsylvania '30, West Hartford
Hall, W. E., Yale '25, Meriden
Halligan, T. J., Vermont '63, Hartford
Halloran, J. V., Boston Univ. '36, Stratford
Hamaty, D., Hahnemann '53, Guilford
Hamblin, W. C., State Univ. N. Y. '52, Windsor
Hambly, R. G., Utah '69, Hamden
Hamilton, C. R., Jr., Jefferson '49, Manchester
Hamilton, G. L., Jr., Tufts '44, West Hartford
Hamilton, T. S., Wayne '39, Hartford
Hamlin, C. H., Harvard '41, Hartford
Hampton, W. H., Syracuse '54, Greenwich
Hampton, W. R., State Univ. New York '59, Simsbury
Handler, S. L., Louisville '51, New Haven
Haney, J. F. B., Yale '64, Storrs (Windham County)
Hankin, E., Columbia P. & S. '62, Fairfield
Hanley, H. C., Toronto '63, Bridgeport
Hanley, J. B., Jefferson '39, Bristol
Hannan, W. S., Harvard '45, Hartford
Hansen, C. E., Cordoba's Nat'l. Un. '60, Stamford
Hansen, T. W., Harvard '60, New Haven
Hansen, W. H., N. Y. Med. Coll. '46, Shelton
Hanson, E. E., Baylor '63, Stamford
Hanson, T. M., Columbia '69, New Haven

Happel, E., Washington Univ. '49, New Milford
Hardenbergh, D. B., Harvard '34, Southport
Hardman, D. R., Indiana '63, Hartford
Hardy, J. H., Columbia '58, Hartford
Hardy, R. E., Cornell '57, Greenwich
Hare, E. T., Jr., Vermont '58, Milford
Harkins, J. A., N. Y. Med. Coll. '52, Norwichtown
Harkins, R. W., St. Louis '61, Woodbury
Harness, J. H., National Un. Ireland '54, Darien
Harrell, S. R., Emory '66, San Diego, California (Fairfield County)
Harris, A. L., Long Island '14, Essex
Harris, B. R., Yale '22, West Haven
Harris, H. P., Jr., Duke '36, Fairfield
Harris, L. D., Tufts '34, Hartford
Harris, R. L., N. Y. U. '59, West Hartford
Harrison, A. M., N. Y. Med. Coll. '51, Stamford
Harrison, E. R., Yale '26, New Haven
Harrison, M., Jefferson '29, Naples, Florida (New London County)
Harrison, S. L., Washington '30, Southbury
Harrop, J. S., Jefferson '61, Avon
Harshbarger, I. L., Virginia '22, Monroe
Harshbarger, J. E., Pennsylvania '55, Bridgeport
Hart, H. H., McGill '22, Southbury
Hart, J. C., Yale '30, New Haven
Hart, R. W., Cornell '45, Hamden
Hart, W. E., Jefferson '49, Hartford
Hartman, F. B., Harvard '34, New London
Harton, M. R., Tufts '60, Danielson
Harty, J. E., Georgetown '37, Waterbury
Harvard, B. M., Jr., Tulane '39, New Haven
Harvey, C. C., Cornell '16, Middletown
Harvey, E. R. Jr., Yale '41, Seymour
Harvey, R. B., Cornell '45, New Haven
Harvey, S. W., Cornell '46, Middletown
Harwin, S. M., New York '61, New Britain
Harwood, C. W., Vermont '40, Middletown
Haskins, D. M., Harvard '47, Greenwich
Hassan, K. A., Alexandria '52, Stamford
Hasson, J., St. Un. New York '51, Hartford
Hau, K. H., Wuhan '56, Bridgeport
Haugh, J. D., N. Y. U. '52, Hartford
Havlicek, J. A., Queen's '63, Higganum
Hawkes, P. H. R., St. Bartholomew's Hospital '49, New Britain
Hawkins, H. B., Harvard '66, Hartford
Haxo, J. V., Yale '51, New Milford
Haydock, G. G., Harvard '45, Sharon
Hayes, D., Harvard '51, New London
Hayes, M. A., Michigan '40, New Haven
Hays, D. R., N. Y. U. '49, Washington
Hazen, D. R., Harvard '33, Hartford
Healy, J. W., Tufts '55, Hartford
Healy, T. M., Columbia '41, Manchester
Heap, L. D., St. George's Hosp. Med. Sch. '58, Southington
Hebard, G. W., Cornell '36, New Canaan
Hecht, H. L., Albert Einstein '62, Stamford
Heckelman, B. J., Bologna '70, Newtown
Hecklau, E. F., N. Y. U. '54, Greenwich
Hedberg, D. L., McGill '60, Hartford
Hedley, G. E., Heidelberg Un. '67, Norwalk
Heiger, A. A. Basel '59, Cheshire
Heimann, W. G., Bern '56, Manchester
Heinrich, W. D. Hahnemann '41, Torrington
Helfrick, F. W., Johns Hopkins '41, Manchester
Heller, C. I., Columbia '68. Bridgeport
Heller, S. F., Tufts '69, Groton
Heller, W., State Univ. N. Y. '60, Bridgeport
Hellijas, C. S., Rochester '41, Wethersfield
Hellman, S., Syracuse '59, Boston, Mass. (New Haven County)
Helvie, H. E., Oklahoma '60, Waterbury
Hemenway, C. G., Tufts '69, Bridgeport
Hendessi, H., Tehran '56, Manchester
Henisz, A. K., Warsaw, Poland '60, Sharon
Henken, E. M., Tufts '52, Hartford
Henkle, R. T., Cornell '31, New London
Hennessey, B. C., Dalhousie '64, Bristol
Hennessey, J. F., McGill '53, Meriden
Hennessey, J. G., Tufts '34, Bridgeport
Hennessy, J. J., Columbia '26, Hartford
Henry, P. D., McGill '52, Derby (Fairfield County)
Hensley, R. V., Univ. Texas '62, West Hartford
Hepburn, R. H., Harvard '39, Hartford
Herbert, E. A., Cornell '49, Willimantic
Herbin, J. T., Zurich '66, Fairfield
Herbordt, W. A., Berlin '46, Woodbridge
Herman, E. B., Berne '56, Norwalk
Herman, M., Univ. Dublin '39, Bridgeport
Herman, R. S., Jr., Buffalo '46, Manchester
Hermann, J. H., Copenhagen '59, Norwalk
Herr, H. H., Tufts '49, New Britain
Herrera, N. E., Santo Domingo '50, Danbury
Herrmann, A. E., Harvard '23, Waterbury
Hersey, T. F., Tufts '37, New Haven
Hersh, S. B., Chicago Med. Sch. '69, Waterbury
Hershey, D. D., Albany '50, Bristol
Hershman, H. H., Western Ontario '41, Bristol
Herzog, A., Pennsylvania '67, Hartford
Hess, O. W., Buffalo '31, North Haven
Hetzel, J. L., Yale '26, Waterbury
Hewetson, J. B., Cork Medical '57, Putnam
Hewett, W. J., Un. Buffalo '61, Hartford
Hewitt, J. K., Boston '69, Hartford
Hickcox, C. B., Tufts '38, Hartford
Hickmon, N., Meharry '59, Hartford
Hickox, D. B., Albany '62, Middletown
Hicks, G. W., St. Louis Un. '67, Indianapolis, Indiana (Fairfield County)
Hicks, J. E., Tennessee '66, New Haven
Hicks, R. E., Munich '59, New Britain
Hiden, R. B., Virginia '23, New Canaan
Higgins, D. C., State Univ. N. Y. '55, New Haven
Higgins, H. W., Tufts '32, Norwich
Higgins, J. J., Georgetown '28, Enfield (New Haven County)
Higgins, K. E., Rochester '58, Fairfield
Hild, D. H., Un. Pennsylvania '62, Hartford
Hill, D. A., Yale '65, Hartford
Hill, J. M., Illinois '53, West Hartford
Hill, P. R., Marquette '50, Bridgeport
Hill, T. M., Maryland '66, Hartford
Hill, W. E., Jr., Temple '52, Naugatuck
Hillemeir, H., N. Y. Med. Coll. '51, Farmington
Hillis, W., Cornell '55, Greenwich
Himelstein, M., Columbia '51, Hartford
Himelstein, S. C., St. Un. New York '65, Enfield
Himmelsbach, R. K., Georgetown '57, Simsbury
Hinchey, R. J., Tufts '21, Middlebury
Hines, A. H., Un. Pennsylvania '69, Danbury
Hines, T. F., Pittsburgh '42, Wallingford
Hinz, C. F., Jr., Western Reserve 51, Farmington
Hirschfeld, O. M., Tufts '31, Hartford
Hirschberg, M. S., Tufts '27, Bloomfield
Hobbie, R. J., Vermont '65, Fairfield
Hochberg, D. T., Johns Hopkins '62, Putnam
Hochman, H. I., UConn '73, Farmington
Hockmuth, L. N., Tufts '42, West Simsbury
Hoden, P. D., Univ. of Vermont '70, Waterbury

Hodgkins, C. H., Hahnemann '36, New Haven
Hofbauer, H. B., Penn '68, Wallingford
Hoffer, J. M., Tufts '46, Ansonia
Hoffman, D., Univ. of Louisville '69, Middletown
Hoffman, H. B., Northwestern '61, Hartford
Hoffman, J. B., Columbia '43, Greenwich
Hoffman, L. I., Albert-Einstein '66, West Hartford
Hoffman, W. A., State Univ. '53, Fairfield
Hogan, A. F., N. Y. Med. Coll. '49, Putnam
Hogan, G. F., Yale '57, New Haven
Hogan, J. M., Univ. Coll. Dublin '56, Waterbury
Holden, J., Long Island '47, Derby
Holden, W. W., N. Y. U. '47, Bristol
Hollander, J. S., St. Univ. New York '60, Enfield
Hollander, M. E., Hahnemann '69, Meriden
Holley, M. R., Howard '61, New Haven
Hollinshead, J. B., Yale '37, West Hartford
Hollister, J. M., Cornell '58, Groton
Holtz, R. S., Vermont '28, West Hartford
Homer, D. R., Vermont '60, Danbury
Homza, L. R., Creighton '58, Bridgeport
Hook, R., Municipal Univ. Amsterdam '61, New Haven
Hope-Ross, P. E., Nat'l. Ireland '53, Bridgeport
Horan, A. H., Columbia '65, Westport
Horn, B., N. Y. U. '29, Bridgeport
Hornblow, J. T., Albany '60, Hartford
Horning, B. G., Harvard '28, Malaga, Spain (Hartford County)
Horowitz, B. J., Pennsylvania '59, Hartford
Horowitz, I., Vienna '37, Bridgeport
Horowitz, J. L., N. Y. Med. Coll. '49, Bridgeport
Horrax, T. M., Temple '46, New Britain
Horrigan, T. H., N. Y. U. '49, Glastonbury
Horton, F. H., Yale '47, Manchester
Horton, P. C., Minnesota '68, Meriden
Horton, W. H., Boston '40, Guilford
Horwitz, M., Harvard '49, Manchester
Hosking, W. F., Queens Univ. '61, West Hartford
Hostnik, W. J., Johns Hopkins '54, New London
Houck, J. H., Queens U. '49, Hartford
Hough, P. T., McGill '32, Nova Scotia, Canada (Hartford County)
Houle, R. T., Georgetown '32, South Windsor
Houlihan, J. J., N. Y. Med. Coll. '46, West Hartford
Houlihan, R. K., N. Y. Med. Coll. '54, New Haven
Hourihane, M. J., Nat'l. U. Ireland '61, West Haven
Howard, L. K., Minnesota '29, Hartford
Howard, R. O., Virginia '61, New Britain
Howard, W. O., N.Y.U '32, East Orange, New Jersey (New Haven County)
Howe, E. R., Columbia '46, Hartford
Howe, G. O., Colorado '50, West Hartford
Howieson, J., Kansas '55, Greenwich
Howorth, B. M., Washington '25, Greenwich
Hubbard, R. C., Cincinnati '46, Danbury
Huber, H. C., Temple '46, Waterbury
Hughes, C. T., Jr., Harvard '53, Hartford
Hughes, G. S., Indiana '44, Darien
Hughes, W. F., Jefferson '48, Westport
Hull, C., Queens '55, Hartford
Hulme, S. A., Pittsburgh '45, Hartford
Humphries, R. H., Columbia '64, New Canaan
Hunkemeier, E., N. Y. U. '33, Rowayton
Hunt, M. L., Tufts '51, Tolland
Hurowitz, R. B., Basel '59. West Haven
Hurst, V. W., III, Yale '62, Woodbury (New Haven County)
Hurwit, T. C., Tufts '57, Bloomfield
Hurwitz, G. H., Maryland '33, Hartford
Hurwitz, M. R., Albany '64, Hartford
Hurwitz, S., Long Island '49, New Haven
Hurzeler, M. A., Creighton '60, New Haven
Huss, G. R., Temple '49, Leonia, New Jersey (Fairfield County)
Husvet, F., Med. Sch. Univ. of Pecs. '51, Winsted
Huvelle, C. H., N. Y. U. '43, Torrington
Hyland, F. J., Galway '54, Milford
Hyland, J., Nat'l. Un. Ireland '55, Hamden
Hyun, J., Seoul '52, Hartford

Iacovino, J. R., Tufts '67, Norwalk
Iannotti, J. P., Naples '38, Plainville
Iannotti, S., Un. Naples '68 Ansonia
Iger, H. G., State Univ. N. Y. '62, Hartford
Igersheimer, W. W., Tufts '44, Guilford
Ignace, S. J., Georgetown '30, New Milford
Ill, K. C., N.Y. Med. Coll. '54. Plainville
Ill, M. F., New York '55, Bristol
Immordino, P. A., Columbia '62, New London
Imran, A. H., King Edw. Med. Coll. '67, Simsbury
Inder, H. A., McGill '51, Bridgeport
Inkster, J. H., Cornell '30, Keene, New Hampshire (Fairfield County)
Innes, J. W., Cornell '60, Greenwich
Iodice, M. T., Freiburg '64, Bridgeport
Ippolito, T. L., N. Y. Med. Coll. '38, East Norwalk
Ireland, E. F., Jr., Harvard '48, Bridgeport
Irving, W. D., N. Y. Med. Coll. '52, Old Saybrook
Irwin, H. H., Tufts '34, New London
Irwin, J. B., Long Island '48, Torrington
Isay, R. A., Rochester '61, New Haven
Izard, M. W., Physicians & Surgeons '59, Hartford
Izumi, E. M., Texas '50, Winsted
Izzo, P. A., Vermont '46, Stamford

Jack, J. L., Yale '23, North Haven
Jackson, A. H., Yale '24, Southbury
Jackson, D. L., Cornell '64, New London
Jackson, S. W., McGill '50, New Haven
Jacobson, C. E., Jr., Cornell '35, Manchester
Jacobson, H., Lausanne '62, New Haven
Jacobson, J. J., Iowa '63, New Britain
Jacuch, M., Ukraine '55, Hartford
Jaeger, C. A., Duke '50, Greenwich (New Haven County)
Jaiven, S. J., N. Y. U. '40, Stamford
James, L. P., Yale '27, Hartford
James, W. R., Yale '44, Essex
Jameson, M. E., Edinburgh '52, Danbury
Jameson, T. P., Edinburgh '52, Danbury
Jamshidi, A. Teheran '54, Bridgeport
Janet S. J., Zurich '56, Milford
January, D. A., Yale '34, West Hartford
January, M. H., Yale '35, West Hartford
Janzen, A. H., Kansas '38. Hartford
Jarboe, E. J., Tennessee '60, New Britain
Jay, H. H., N.Y.U. '70, Fairfield
Jee, K. S., Seoul Nat'l. '62, Norwalk
Jegasothy, B. U., Ceylon '66, New Haven
Jennes, M. L., Tufts '38, Waterbury
Jennings, W. F., Rush '37, Groton (Hartford County)
Jensen, G. O. F., New York '57, Bristol
Jensen, P. B., London Univ. '52, Surrey, England (Fairfield County)
Jenusaitis, J. R., Tufts '47, Waterbury
Jeresaty, R. M., Beirut '54, Hartford
Jeshuran, W. R., Ceylon '66, Meriden
Job, G. G., Univ. Philippines '59, West Haven
Johnson, C. W., Boston '45, Thompsonville
Johnson, D. P., Yale '64, Middletown

Johnson, D. W., Columbia '48, Hartford
Johnson, G. B., Jr., Boston '55, Bridgeport
Johnson, H. K., Jr., Jefferson '58, New London
Johnson, J. C., Jr., Vanderbilt '44, Hartford
Johnson, M. E., Wom. Med. Coll. Penn. '57, New London
Johnson, P., Tufts '32, Hartford
Johnson, S. A., Columbia '49, New Britain
Johnson, T. H., Columbia '59, New Britain
Johnson, W. H. N., Howard '39, Westport
Johnston, J. H., Long Island College '43, Wethersfield
Johnston, J. J., Duke '67, Simsbury
Jonas, G. Q., N. Y. U. '50, Fairfield
Jonas, S. L., Un. Michigan '50, Wilton
Jones, C. R., New York Med. Coll. '62, Hamden
Jones, E. A., Temple '56 Essex (New London County)
Jones, E. E., Med. Coll. Virginia '52, Farmington
Jones, E. K., Columbia '34, Fairfield
Jones, J. F., Columbia '43, Danielson
Jones, M. B., N. Y. U. '41, Norwalk
Jones, R. F. III, Virginia '61, Hartford
Jones, W. N., Rochester '50, New London
Jordan, R. H., Virginia '33, New Haven
Josel, M., Chicago '52, Hartford
Joseph, J. L., Port-au-Prince '54, Norwich
Joseph, L. G., Jefferson '39, New Haven
Josephson, N. D., Yale '45, Rockville
Joslin, S. L., Yale '43, Fairfield
Jovell, J. W., Tufts '39, Danbury
Joy, R. C., McGill '51, Danbury
Jung, R. M., Tufts '62, New London

Kadish, J. A., Queen's '60, Norwich
Kadish, M. E., Geneva 55, Norwich
Kaess, K. R., Harvard '44, Winsted
Kahaner, H. A., Tufts '63, Manchester
Kahn, D., State Univ. N. Y. '53, Meriden
Kalaman, F. J., Georgetown '41, Norwalk
Kalams, Z. S., Athens '53, Norwich
Kalayjian, D. B., Univ. Chicago '67, Middletown
Kalett, J., Jefferson '28, Sarasota, Florida (Hartford County)
Kalin, J. I., Harvard '24, Hartford
Kallfelz, A., New York '55, Hartford
Kallick, C. J., Jefferson '58, Westport
Kamens, E. A., Vermont '51, Fairfield
Kaminsky, D. M., N. Y. U. '63, Orange
Kang, J. H. C., Yonsei Un. '65, Farmington
Kanter, D. M., Long Island Coll. of Med. '49. Stamford
Kantharaj, A. J., Christain Med. College '56, Norwich
Kaplan, B. J., Vermont '49, Hartford
Kaplan, D. H., N. Y. Med. '55, New London
Kaplan, H., N. Y. Med. Coll. '44, New Britain
Kaplan, H. P., Yale '63, Meriden
Kaplan, J. R., New York '68, Southington
Kaplan, L., Baylor '36, Bridgeport
Kaplowe, J. L., N. Y. Med. Coll. '30, New Haven
Kapp, P. A., S. U. N Y. '56, Fairfield
Karas, L. M., Tufts '57, Stamford
Kardos, J. A., Jefferson '51, Stamford
Karlovsky, E. D., Albany '46, Orange
Karno, M. L., Tufts '55, New London
Karns, R. E., Jefferson '50, Manchester
Karpe, R., Prague '24, Hartford
Karsh, J. A., Beirut '46, Waterbury
Kaschmann, J., Munich '22, West Hartford
Kashgarian, M., Yale '58, New Haven
Kasper, R. F., Georgetown '58, Bridgeport
Katis, J. G., McGill Un. '60, New Canaan
Katis, L. U., Saskatchewan '57, Ridgefield
Katz, A. J., Pennsylvania '62, Farmington
Katz, D., Vermont '25, Laguna Hills, California (Hartford County)
Katz, H., Harvard '21, Hartford
Katz, I., N. Y. Med. Coll. '37, Meriden
Katz, J., Harvard '49, New Haven
Katz, M. E., Oklahoma '41, Norwich
Katz, S. R., N.Y.U., '64, Fairfield
Katzin, B., Johns Hopkins '43, Torrington
Kauders, J. T., Jefferson '62, Bridgeport
Kauer, G. L., Jr., Cornell '37, Greenwich
Kaufman, M., Johns Hopkins '43, Fairfield
Kaufman, W., Michigan '38, Stratford
Kaufmann, H. A., Michigan '54, Middletown
Kaunitz, P. E., N. Y. U. '38, Westport
Kavirajan, V., Madras, India '66, New Milford
Kavookjian, H., Jr., Beirut '50, Darien
Kawecki. W., National Univ. '55, New Britain
Kay, C. J., S U N Y '60, Bridgeport
Kay, F., Boston '58, Hamden
Kay, R., Temple '45, Hartford
Kayal, F. A., New Jersey Coll. Med. '69, Brookfield
Kaye, D. E., Tufts '70, Bristol
Kaye, R. H., Johns Hopkins '65, Norwalk
Kazanjian, N. A., Hahnemann '45, New Haven
Keating, S. J., Jr., Georgetown '62, Simsbury
Keddy, R. A., McGill '24 Stamford
Keefe, A. D., N. Y. Med. Coll. '52, East Hartford
Keefe, R. B., Maryland '54, Windsor
Keefe, R. S., Boston '25, Wethersfield
Keefe, W. P., Maryland '55, Hartford
Keegan, J. T., Maryland '55, Milford
Keeney, R. R., Jr., Tufts '34, Manchester
Keet, J. E., Long Island '47, Waterbury
Keggi, K. J., Yale '59, Waterbury
Keleman, E., Budapest '25, South Laguna, Calif. (Fairfield County)
Kellan, C., Cluj '57, Wallingford
Kelleher, J. H., Vermont '42, Norwich
Kelleher, M. J., N. Y. Med. Coll. '60, Bridgeport
Keller, B. R., S.U.N.Y. '65, Danbury
Keller, D. J., Vermont '68, New Britain
Keller, F., Long Island '43, Woodbridge
Keller, L., Tufts '26, Stamford
Keller, N. W., Cornell '54, Greenwich
Kelley, W. O., Johns Hopkins '37, Norwich
Kelly, C. C., Johns Hopkins '14, Hartford
Kelly, D. R. Albany '64, Hartford
Kelly, G. P., N.Y.U. '69, Fairfield
Kelly, J. C., Queen's '28, Riverside
Kelly, J. F., Tufts '50, Middletown
Kelly, M., Tufts '50, Middletown
Kemler, R. L., Yale '43, Hartford
Kemp, E. P., Tufts '25, Fairfield
Kemp, W. W., Harvard '39, Stamford
Kenigsberg, N., Yale '39, Fairfield
Kennedy, G. L., Tufts '50, Jewett City (Windham County)
Kennedy, J. J., Jr., Boston '46, Windsor Locks
Kenney, J. D., Boston '56, New Haven
Kenny, W. J., Dublin '60, West Hartford
Kent, E. H., N. Y. U. '43, Greenwich
Kenter, A. M., Ankara '51, Danbury
Keogh, R. J., Georgetown '57, Stratford
Keohane, M. F., Dublin '52, West Haven
Kerin, R., Yale '47, Milford
Kerin, W., St. Louis Coll. P & S '71, New Haven
Kerr, R. J. N., Trinity Coll. Dublin '56, Clinton
Kerrigan, R., New York '62, Norwich
Kerstein, M. D., Chicago '63, West Haven
Kertesz, J., Vienna '24, Hamden
Kessel, L., Vienna '34, Wethersfield

Kessler, F., Vienna '37, New Haven
Kessler, W., Rochester '58, Westport
Keys, R. C., Kansas '27, Winchester, Kansas (Fairfield County)
Khachane, V. B., Calcutta Nat'l. Med. '63, New Haven
Khan, K., King Edward Med. Coll. '50, New Britain
Khoshnood, F., Tehran Med. Sch. '65, Stamford
Khoury, A. E., Georgetown '60, Danielson
Khu, E. G., Sto. Tomas '63, New Haven
Kiley, R. F., Yale '53, Hartford
Kiley, R. J., Virginia '66, Waterbury
Kilga, L. A., Un. Heidelberg '66, Higganum
Kilgus, J. F., Maryland '31 Avon (Litchfield County)
Kilhenny, C., N. Y. Med. '57, Danbury
Kim, C. A., Kyungpook Un. Korea '58, New London
Kim, C. K., Boston '63, Manchester
Kim, K., Seoul '52, New Haven
Kim, K. S. C., Korea Univ. '64, Bridgeport
Kim, P., Nat'l. Taiwan Un. '65, Stamford
Kim, Y. H., Seoul Nat'l. Un. '61, Easton
King, E. J., London Hosp. '43, Falls Village (Fairfield County)
King, R. P., N. Y. Med. Coll. '57, New Haven
King, S. A., Columbia '47, Stamford
Kingston, P. J., N. Y. Med. Coll. '50, Hartford
Kinstlinger, R., Rochester '60, West Haven
Kirchner, J. A., Virginia '40, New Haven
Kirkpatrick, J. R., Baylor '69, Hartford (Windham County)
Kirsch, N., Long Island '40, West Hartford
Kirmser, R. J., Yale '71, Branford
Kish, L. H., Rochester '64, Bristol
Kiss, G. T., Cornell 51, Fairfield
Kitahata, L. M., Tokyo Imperial Univ. '47, New Haven
Kitchen, R. N., Un. Michigan '56, Old Greenwich
Klare, R. E., Columbia '53, East Woodstock
Klatskin, G., Cornell '33, New Haven
Klatsky, A. U., George Washington '59, Hartford
Kleeman, J. A., Yale '46, Bethany
Klein, B., N. Y. Med. Coll. '52, South Meriden
Klein, H. T., Illinois '40, Stamford
Klein, J., Long Island '34, Hartford
Klein, J. J., St. Univ. New York '57, Norwalk
Klein, M., Univ. Chicago '61, Wilton
Klein, N. C., Cornell '60, Stamford
Kleinman, H. L., Buffalo '41, Bridgeport
Kligerman, S., Illinois '39, Hartford
Kligfeld, M., Albert Einstein '67, Woodbridge
Klimas, F. A., Vermont '54, Fairfield
Klimek, R. J., S. U. N. Y. '66, New London
Klinger, S. Y., Indiana '54, Woodbury (New Haven County)
Klipstein, A., N. Y. U. '65, Manchester
Klipstein, E. A., N. Y. U. '65, Manchester
Klumpp, T. G., Harvard '28, New York City (New Haven County)
Knauff, E. F., New York '54, Fairfield
Kneale, H. B., Johns Hopkins '20, Fairfield
Knight, H. F. Rochester '49, Hartford
Knights, W., Vermont '60, East Hartford
Knirsch, A. K., Western Ontario '62, Waterford
Knobelman, R. A., Pennsylvania '71, York, Maine (New Haven County)
Knowlton, A. H., Albany '66, New Haven
Knox, A. E. H., Nebraska '47, Bloomfield
Knox, K. R., Jefferson '46, Hartford
Koch, L. W., New York '63, New Britain
Koehler, P. B., Yale '48, Trumbull
Koenig, A. R., North Carolina '58, Cos Cob
Koenigsberg, D. N., Albert Einstein '66, New Haven
Koff, A. M., Columbia '57, Avon
Koff, M. S., Hahnemann '63, Hartford
Koffler, A., Jefferson '34, Stamford
Kogut, H. V., N. Y. Med. Coll. '43, Bridgeport
Koleshko, L. J., Maryland '42, Waterbury
Komninos, A., N. Y. S. '52, Willimantic
Kondo, K., Keio Un. Tokyo '63, Orange
Koops, H. J., Harvard '66, New Britain
Kopeloff, N., Albert Einstein '66, Greenwich
Korab, J. J., Tufts '43, Higganum
Korn, F. E., N. Y. Med. Coll. '50. Middletown
Kornblut, A., N.Y.U. '20 Fairfield
Kosar, W. P., Columbia '46, Hartford
Koss, N., Yale '66, New Haven
Kostecki, R. J., N. Y. U. '61, Waterbury
Kosto, B., Yale '62, Hartford
Kotch, A., Vermont '64, Danbury
Kotch, P. I., Tufts '60, Newtown
Kott, J. H., N. Y. U '33, Harwinton
Koufman, W. B., Tufts '35, New Haven
Kra, S. J., Lausanne '60, New Haven
Krall, I. H., Long Island '37, Hartford
Kramer, B., Maryland '56, Wallingford
Kramer, F. M., Lausanne '54, Cheshire
Kramer, R. A., Yale '55, Hartford
Kramer, R. T., Wayne '56, Torrington
Kramer, T., N. Y. Med. Coll. '62, Norwalk
Kramm, W. A., Albany '51, Niantic
Krasnogor, L. J., N. Y. U. '63, Stamford
Krassner, L. S., Boston '56, New Haven
Kraus, G., Long Island '44, New Haven (Fairfield County)
Kraus, P. A., Dartmouth & McGill '66, Waterbury
Kraut, H. L., Harvard '53, Stamford
Krauthamer, M. J., St. Univ. New York '62, Darien
Krc, E. Czechoslovakia '52, Wallingford
Kreis, D. J., Tufts '47, New Haven
Kremer, C. P., Jr., Virginia '53, Darien
Krenicky, P. T., Hahnemann '67, East Hartford
Kresge, D. J., Temple '53, Avon
Krieger, J. L., Long Island '49, Hartford
Krinsky, C. M., Tufts '33, New London
Kristan, J. J., Johns Hopkins '45, Rockville
Kriz, J. J., Virginia '61, Rockville
Krizek, T. J., Marquette '57, New Haven
Krochmal, H., Vienna '37, Meriden
Kropp, P. J., Cologne '48, Norwich
Krosnick, G., Jefferson '38, New Haven
Krosnick, M. Y., Yale '30, New Haven
Krupp, A. F., N. Y. Med. Coll. '62, Manchester
Kuczko, E. P., N. Y. U. '52, Danbury
Kueffner, W. R., Minnesota '43, Southport
Kuehn, P. G., Rochester '52, Hartford
Kugelman, T. P., Yale '60, Hartford
Kuhn, H. R., Texas '52, New London
Kuk, D. S., Vermont '69 North Grosvenordale
Kummer, A. J., Harvard '39, New Haven
Kummer, S. I., Hahnemann '49, Rockville
Kunkel, P., Washington '34, Danbury (New Haven County)
Kurien, V. A., Edinburgh, Scotland '63, Manchester
Kurland, M. D., Harvard '60, West Hartford
Kuru, R. L., Un. Ceylon '68, Manchester
Kushlan, S. D., Yale '35, New Haven
Kutcher-Henchel, J. A., Women's Med. '69, New Haven
Kwass, W., New York '66, New Haven
Kwee, H. S., Surabaya, Indonesia '65, New London

Laakso, W. B., Tufts '61, Hartford
La Bella, L. O., Columbia '25, Middletown
Labraico, J. M., Jefferson '58, Bristol
LaBrecque, F. C., Tufts '35, Waterbury

Labriola, G., Jefferson '57, Naugatuck
LaCamera, R. G., Cincinnati '49, New Haven
Lacava, J. J., Georgetown '34, New Britain
Lach, F. E., Maryland '41, New Haven
LaCorte, S., N. Y. Med. Coll. '30, Stamford
LaFemina, N. F., Long Island '25, Hamden
Laffaye, H. A., Buenos Aires '61, Westport
LaForte, P., N. Y. U. '50, Stamford
LaGratta, R. J., S. U. N. Y. '67, Danbury
Lahey, W. J., Harvard '42, Hartford
Lahiri, B., Univ. Calcutta '60, Hartford
Lahvis, W. F., St. Univ. N. Y. '56, New Milford
Lakin, P. C., Colorado '64, New Britain
LaMastra, P. M., Maryland '60, Bridgeport
Lamb, E. S., Yale '55, West Hartford (New London County)
Lambe, M. J., Queen Univ. Belfast '63, Middletown
Lambe, T. P., Queens Univ. '61, Middletown
Landau, S. J., Yale '55, New Haven
Lande, S., Yale '74, Waterbury
Landow, S. S., Un. Heidelberg '66, Branford (Middlesex County)
Landry, A. B., Jr., Jefferson '56, Hartford
Landwirth, J., S. U. N. Y. '61, Bridgeport
Landy, G., Case Western '63, Cheshire
Langan, M. J., Columbia '46, Greenwich
Langenauer, B. J., Albert Einstein '64, Hamden
Langhammer, H., Heidelberg '55, Norwich
Langmann, R. D., Physicians & Surgeons '55, Hartford
Langner, H. P., Yale '22, Milford
Langner, J. M., Un. Zurich '53, Southington (New Haven County)
Laning, G. M., Michigan '10, Sharon
Lanzi, R. A., Temple '61, Orange
Lapenta, R. G., George Washington '37, Hartford
LaPierre, A. R., Columbia '38, Norwich
LaPierre, W. W., Columbia '39, Norwich
Lapinski, L. S., Yale '50, Bridgeport
Laplume, A. A., Montreal '24, Tamarac, Ft. Lauderdale, Florida (Hartford County)
LaPorte, T. F. V., Boston '33, Bristol
Larkin, C. L., Jr., Columbia '46, Waterbury
Larkin, J. C., Johns Hopkins '35, New Britain
Larkin, J. I., Albany '57, Greenwich
Larkin, J. T., Georgetown '30, Hampton
Larson, A. L., Albany '36, Hartford
Lashgari, M., Tehran '62, Hartford
Lasser, J. L., Boston '66, Meriden
Lassman, M. N., Rochester '68, Hartford
Lattanzi, W. E., Yale '55, New Haven
Laubstein, M. B.. S. U. N. Y. '56, Ansonia
Laudano, A. J., Tufts '47, New Haven
Lavietes, P. H., Yale '30, New Haven
Lavietes, S. R., Baylor '49, New Haven
Lavorgna, M. H., St. Louis '40, New Haven
Lawlor, E. F., N. Y. Med. Coll. '59, Collinsville
Lawrence, G. J., New York Med. Coll. '63, Willimantic
Lawrence, J. J., Howard '57, Bridgeport
Lawson, I. R., Aberdeen Un., Scotland '54, Danbury (Hartford County)
Lawson, J. P., Manchester, England '55, Derby
Lazor, M. Z., Columbia P & S '57, Hartford
Leach, C. N., Jr., Columbia '60, Farmington
Lear, H. A., St. Louis '43, New York, New York (Hartford County)
Lear, M., Yale '11, Palm Beach, Florida (New Haven County)
Leavy, S. A., Rochester '40, New Haven
Lebhar, N. F., Columbia '39, Westport
Lebowitz, A. I., Hahnemann '66, Stamford
Lebowitz, W. B., Boston '56, Bridgeport
Lebson, R. E., Albert Einstein '64, New Haven
Lee, H. J., Yonsei, Korea '64, Bridgeport
Lee, J. F., Cornell '46, Greenwich
Lee, J. P., Nat'l. Defense Med. Ctr. '64, Middletown
Lee, J. R. Queen's '24, Southbury
Lee, K., National Defense Med. Ctr., China '64, Waterbury
Lee, K. J., Columbia '65, New Haven
Lee, M. A., Louisville '66, Fairfield
Lee, N. H., Seoul Nat'l. Univ. '49, Bridgeport
Lee, S., Yonsei, Korea '63, Willimantic
Lee, W., Yale '41, Hartford
Lee, W. B., Yonsei Un. '60, Norwich
Lee, W. K., Un. Hong Kong '67, Hartford
Leeds, W. G., Long Island College '48, West Hartford
Lehman, R. M., N.Y.U. '71, Waterbury
Lehmann, W. B., Yale '63, Hartford
Lehmann, W. X., N. Y. Med. Coll. '43, Wilton
Lehmus, H. J., N. Y. U. '43, Manchester
Lehrman, J. C., Albert Einstein '66, Meriden
Leib, D. B., Yale '55, New London
Leib, G. M. P., Yale '55, New London
Leicach, J., Buenos Aires '56, Kensington
Leicach, M., Buenos Aires '53, Hartford
Leighton, R. L., N. Y. Med. Coll. '60, Fairfield
Lena, H. F., Jr., Cornell '45, New London
Lena, R. P., Tufts '57, New Haven
Lenci, T. D., Columbia '49, Fairfield
Lencz, E., Vienna '36, Miami Beach, Florida (New Haven County)
Lenehan, J. R., Jefferson '37, West Hartford
Lengyel, P., Budapest '31, San Francisco, California (Fairfield County)
Lenkowski, W. J., N. Y. U. '37, Waterbury
Leone, P. V., N. Y. Med. Coll. '50, Bridgeport
Leonhardt, C. G., Albany '53, Hartford
Lepow, I. H., Western Reserve '58, Farmington
Lepow, M. L., Western Reserve '52, Farmington
Lerner, A. B., Minnesota '45, New Haven
Lerner, M. R., Western Reserve '50, New Haven
LeRoy, J. B., Yale '50, West Willington (Litchfield County)
LeRoyer, C. P., Tufts '42, Hartford
Lesko, J. M., Duke '38, Bridgeport
Lesnik, T. H., Albany Med. College '67, Norwich
Lesser, R. L., Cornell '67, Waterbury
Lessow, R. J., Tufts '68, Hartford
Levenstein, M., N. Y. U. '58, Hamden
Levieff, L., Lausanne '50, Stratford
Levin, A. E., Tufts '30, Hartford
Levin, H. A., Univ. & Bellevue '18, New Haven
Levin, L., Middlesex Hosp. Med. Sch. '65, Meriden
Levine, A. I., N. Y. U. '35, Rowayton
Levine, H., Harvard '41, New Britain
Levine, H., N. Y. U. '46, Middletown
Levine, H. P., Vermont '50, Stamford
Levine, I. R., Tufts '62, New Haven
Levine, J., Vermont '50, Stamford
Levine, M., Ghent, Belgium '60, Bloomfield
Levine, R. A., S.U.N.Y '62, Norwalk
Levine, R. A., S.U.N.Y. '66, Branford
Levinsky, M., Maryland '28, Bridgeport
Levis, A. J., Zurich '63, Hamden
Levreault, G. V., Tufts '42, Hartford
Levy, A., Tufts '31, Winsted
Levy, A. L., Albert Einstein '66, New Haven
Levy, B. Seton Hall '60, Hartford
Levy, H. D., Boston '59, Branford
Levy, L. L., Temple '46, New Haven
Levy, M. N., Tufts '23, Bay Harbor Islands, Florida (Fairfield County)
Levy, N., Yale '27, Branford

Levy, R. M., Tulane '56, Derby
Levy, S. H., Tufts '35, Stratford
Levy, T. S., Med. Coll. of S. C. '48, Bridgeport
Lewicki, E. S., Georgetown '35, Waterbury
Lewin, M. L., Albert Einstein '61, Bridgeport
Lewis, D. O., Yale '63, New Haven
Lewis, G. L., Yale '45, Simsbury
Lewis, H. D., Harvard '42, New Haven
Lewis, M., Guy's Hospital '50, New Haven
Lewis, S. D., George Washington '31, West Palm Beach, Florida (Hartford County)
Lewis, S. H., Albert Einstein '64, Old Greenwich
Lewis, W. S., N. Y. U. '62, Bridgeport
L'Heureux, J. A., Boston '34, Meriden
Liao, S. J., Hsiang Ya '42, Middlebury
Licciardello, A. T., Harvard '47, Stratford
Licht, S., N. Y. U. '31, Coral Gables, Florida (New Haven County)
Lichtman, A., Zurich '54, Westport
Lidz, R. W., Basel '35, Woodbridge
Lidz, T., Columbia '36, New Haven
Lieberson, A. D., Yale '62, Westport
Liebowitz, M., Louvain '66, West Haven
Liebowitz, S. A., Un Basle '65, Bloomfield
Light, C. F., Hahnemann '57, Monroe
Lightbody, F. E. H., Edinburgh '51, Greenwich
Lillian, M., Georgetown '44, New Haven
Lin, P. T. C., Aurora '45, Ansonia
Linburg, R. M., Yale '64, Hartford
Lindenberg, L. B., Upstate Med. Ctr. '65, Hartford
Lindenmuth, W. W., Jefferson '38, New Haven
Linder, J. H., Columbia '27, West Cornwall
Lindquist, C. W., Johns Hopkins '70, Willimantic
Lindskog, G. E., Harvard '28, Branford
Linnolt, E., Royal Charles, Stockholm '51, Hartford
Lion, D. J., State Univ. N.Y. '55, Hamden
Lipkoff, C. J., N. Y. U. '36, Milford
Lippman, K. J., Cornell '66, Westport
Lippman, L., New York Un. '67, Hartford
Lipton, H., St. Louis '32, Hartford
Lirot, S. L., McGill '32, Meriden
Lischner, M. D., Yale '30, Hartford
Lisi, K. R., St. Louis '64, Bridgeport
Liss, J. P., N. Y. Med. Coll. '62, Hartford
Litman, R. B., Yale '70, New Haven
Litter, L., Basel '36, Hartford
Little, D. M., Jr., Harvard '44, Hartford
Little, M. H., Harvard '35, Willimantic
Little, O. A. G., Boston '35, Willimantic
Littman, E., Chicago '61, Norwalk
Livingston, R., Vermont '60, West Hartford
Livingston, W. T., Pennsylvania '43, New Britain
LiVolsi, V. A., Columbia Coll. P & S '69, New Haven
Livstone, E. M., Yale '69, New Haven
Lloyd, D. S., Duke '71, Hartford
Lo, C. B., Dairen Med. Coll., '56, Norwalk
Lobb, R. A., Hahnemann '37, Deep River
Lobdell, D. H., Michigan '56, Bridgeport
Lockhart, R. H., Yale '28, Fairfield
Lockward, H. J., Western Reserve '43, Manchester
Lockwood, J., Johns Hopkins '30, New Preston (Fairfield County)
Loeser, L. K., Western Reserve '52, Storrs
Loewald, E. L., Johns Hopkins '48, Hamden
Loewald, H. W., Rome '34, New Haven
Loewenberg, P. C., Berlin '39, East Hartford
Logan, W. J., Yale '25, New Haven
Loh, H. C., Tung-Teh '50, West Haven
Lohman, W. H., Cornell '45, Glastonbury
Lohrmann, W., Rochester '43, Meriden
Loiacono, R. A., N. Y. Med. Coll. '43, New London
Lojko, A. T., Creighton '69, Putnam
Long, D. S., West Va. Univ. '69, Gales Ferry
Longo, A. D., Georgetown '38, Portland
Longo, E. A., Yale '60, Middletown
Longo, V. F., Long Island '43, Seymour
Longo, V. J., Yale '46, New London
Longstreth, G., Columbia '65, Sharon
Lopatin, C. Louisville '41, Bridgeport
Lopez, R. E., Havana '49, Kensington
LoPresti, D. A., Long Island '47, Hartford
Lord, B. J., Jr., Cornell '43, Norwich
Losito, A. J., St. Louis '38, Port St. Lucie, Florida (Fairfield County)
Lovallo, F., Tufts '44, Sharon
Lovanio, R. G., N. J. Coll. Med. '66, Bridgeport
Lovegrove, R. H., Michigan '59, Stamford
Lovekin, L. G., Wayne '43, Norwalk
Loveless, M. H., Stanford '24, Westport
LoVetere, A. A., George Washington '35, Kensington
Low, H. B. C., St. John's University '50, Hartford
Lowry, E. C., Cornell '35, Guilford
Loyer, R. E., Wayne St. '65, Waterbury
Lubchansky, J. H., N. Y. U. '33, New London
Lublin, R., Johns Hopkins '29, East Hartford
Luby, M. J., N. Y. U. '53, Hartford
Lucas, J. J., Rome '57, Hartford
Luchansky, E. M., New Jersey '67, Fairfield
Luchs, D., McGill '50, Colebrook
Lucia, W., Bologna, Italy '63, Bridgeport
Luciano, M. C., Pennsylvania '44, Bridgeport
Luck, L. E., Albert Einstein '72, Westport
Lujic, P., Zagreb, Yugoslavia '60, New Haven
Lund, D. A., Harvard '61, New Britain
Lundberg, E. A., Vermont '40, Stamford
Lundberg, G. A. F., Jefferson '19, Manchester
Lundberg, G. A. F., Jr., Jefferson '53, Manchester
Lundborg, C. B., N.Y. Med. Coll. '67, Milford
Luria, S., Western Ontario '38, Hallandale, Florida (Fairfield County)
Luria, S. B., Harvard '43, Waterbury
Lyall, S. S., Maulana Azad, India '65, Hartford
Lyddy, J. R., N. Y. U. '44, Stratford
Lynch, F., Columbia '43, Westport
Lynch, J. K., Ottawa '64, New Haven
Lynch, M. E., Harvard '57, Avon
Lynch, V. A., Jefferson '38, Bridgeport
Lynch, V. A., N.Y. Med. Coll. '67, New Haven
Lynch, W. A., Indiana '63, Hartford
Lynch, W. F., Jefferson '52, New Haven
Lyon, G. A., Cornell '41, Bridgeport
Lyons, B. E., Yale '38, Norwalk
Lyons, K. H., Women's Med. Coll., Pa. '54, Waterbury
Lyons, W. B., Georgetown '45, West Haven
Lytton, B., London Hospital '48, New Haven

Mabasa, R. A., Philippines '63, New Milford
Macaulay, W. P., McGill '59, Hartford
MacCready, W. H., Harvard '27, Windsor
MacDonald, C. A., Columbia '59, Torrington
MacDonald, R. J., Albany '64, Farmington
MacDougall, A. D., Cornell '43, Groton
Macgregor, J. V., London '28, Darien
Machcinski, V. A., Yale '47, Danbury
Machledt, J. H., Jr., Johns Hopkins '68, Fairfield
Macionus, R. F., Vermont '66, Cromwell
Mack, A. G., Albany '43, Trumbull
Mack, D. E., Syracuse '43, Windsor
Mack, G. T., Wuerzburg '53, Cheshire
Mack, J. A., Albany '43, Bridgeport

Mackay, I. M., Edinburgh '56, Hartford
Mackay, W. D., Indiana '28, Salisbury
MacKinnon, I., Cornell '51, West Hartford
MacMaster, D. R., Dalhousie '60, Litchfield
Mac Rae, D. W., Johns Hopkins '64, Orange
Mactal, J. A., Far Eastern Un. '68, Danbury
Madden, T. J., Univ. of Chicago '44, New Britain
Madison, R. L., State Univ. N. Y. '53, Stamford
Madwed, A. E., N. Y. Med. Coll. '51, Bridgeport
Magari, S. V., Kastarba '66, Danbury
Magauran, B. G., National Univ. '54, Enfield (Tolland County)
Magendantz, H. G., Duke '62, New Haven
Magida, M. G., Long Island '46, Stamford
Magram, H. M., Columbia '52, Middletown
Maher, P. H., N. Y. Med. Coll. '65, Greenwich
Mahoney, J. J. McGill '33, Norwich
Mahmud, A. W., Dacca Univ. '65, Middletown
Maidman, L., N. Y. U. '40, Wilton
Maier, R. F., Tufts '59, Somers
Maiocco, K. J., Rochester '67, Bridgeport
Maislen, S., Vermont '14, Hartford
Major, J. W., Vanderbilt '39, Willimantic
Malinconico, L. L., Tufts '51, Hartford
Malloy, E. F., Cornell '28, Stamford
Malloy, T. McK., Tufts '62, Danbury
Malone, H. J., Vermont '49, Manchester
Malone, R. F., Tufts '43, Devon
Maloney, P. K., Jr., Georgetown '60, Norwalk
Maloney, R. H., Emory '48, Hartford
Malter, I. J., Harvard '67, Pomfret Center
Malyska, F. A., Georgetown '55, Bridgeport
Manas, A., Tufts '67, Hartford
Mancall, I. T., Pennsylvania '44, Hartford
Manchepalli, A. S. A., Mysore '61, Wallingford
Mancinelli, M. J., Hahnemann '43, Stamford
Mancini, A. D., Turin '56, East Haven
Mancoll, M. M., Jefferson '28, Hartford
Mancoll, W., Jefferson '60, Hartford
Mandell, H. N., Columbia '50, Norwich
Mandell, J., Boston '48, New Britain
Mandl, G., Vienna '32, Bethel
Manes, P. R., Vermont '57, Waterbury
Mangi, R. J., Downstate '67, New Haven
Mangieri, J. V., N. Y. Med. Coll. '63, Bridgeport
Manheim, G., Vermont '46, New Haven
Maniatis, W. R., Yale '47, Bridgeport and New Haven
Manimbo, S. G., Far Eastern Univ., Philippines '63, Stamford
Maningas, A. L., Un. Santo Tomas '57, Wallingford
Manjoney, R. C., Vermont '50, Ansonia
Manjoney, R. J., Vermont '53, Bridgeport
Manjoney, V. A., Vermont '47, Bridgeport
Manlapaz, J. S., Santo Tomas '56, Danbury
Mann, N. M., Long Island '45, Hartford
Mann, W. A., Illinois '48, Greenwich
Manning, I. H., Woman's Med. Pa. '50, Norwich
Mannix, H., Jr., Cornell '50, Hartford
Mansourian, V., Paris '67, New Haven
Mantel, F., New York '64, Hartford
Manzi, J. A., Cork '55, Middletown
Mara, N. F., Vermont '62, Vernon (Hartford County)
Marchand, G. A., Jefferson '64, New London
Marchbanks, V. H., Jr., Howard '37, Hartford
Marchesi, V. T., Yale '63, New Haven
Marcus, H., N.Y.U. '39, Greenwich
Marcus, L. I., Louvain '67, New Canaan
Margolick, M., McGill '35, Putnam
Margolis, R. N., Tufts '58, New Haven
Margolius, N. C., Cornell '33, Waterbury
Margules, R. M., Un. Calif. '66, Newtown
Mari, E. G., Buenos Aires '64, Waterbury
Marianaro, N. A., St. Louis '30, Avon
Mariani, R. A., Pennsylvania '44, New London
Maric, R., Un. Croatia '63, Ansonia
Marieb, N. J., Rochester '59, Orange
Marino, A. M., Georgetown '64, Greenwich
Marino, F. S., Maryland '42, Hartford
Marino, R. S., Boston '42, Waterbury (New Haven County)
Marinucci, E. D., N. Y. Med. Coll. '44, Norwalk
Marjani, M. A., Un. Tehran '61, Waterbury,
Mark, H. H., Vienna '57, New Haven
Markley, D. N., Edinburgh '36, Hartford
Markley, H. E., Yale '43, Greenwich
Markley, L. L., Prague '25, Bridgeport
Marks, E. M., Buffalo '46, Bridgeport
Markwald, H. W., Berlin '37, New Hartford
Marlow, D. J., Women's Med. Coll. of Pa. '47, Kent
Marmer, E. L., Alabama '64, Vernon
Maron, T. W., Jr., New Jersey '67, Essex
Marrash, S. E., Am. Univ. Beirut '57, Bridgeport
Marsh, A., St. Andrews '37, New Britain
Marsh, C. O., Woman's Med. Coll. Pa. '51, West Hartford (New Haven County)
Marsh, R. R., Harvard '45, West Hartford
Marsh, S. H., Harvard '51, Hartford (New Haven County)
Marshak, I. J,, Tufts '26, New Haven
Marshall, B. R., Tufts '54, Hartford
Marshall, D., Northwestern '47, Bloomfield
Marshall, D. C., Harvard '57, New London
Marshall, J. F., Miami '66, New Haven
Marshall, L. F., Chicago '54, West Hartford
Martelon, G. F., Boston '48, Bridgeport
Martin, D. N., Albany '63, Wilton
Martin, E., Yale '40, New Britain
Martin, J. E., Dalhousie '42, Norwich
Martin, J. G., Yale '33, West Hartford
Martin, Katharine Hawley, Yale '44, Watertown
Martin, M. G., Queen's Univ. Can. '44, Norwich
Martin, R. A., Vermont '37, Bridgeport
Martin, R. S., Cornell '61, Hartford
Martin, W. E., N. Y. Med. Coll. '52, Stratford (New Haven County)
Martinson, E. O., Columbia '35, Madison (Middlesex County)
Marvin, H. M., Harvard '18, New Haven
Marx, F. G., Pennsylvania '53, New London
Marzialo, N. A., Tufts '48, Manchester
Mascoli, N. M., Jr., Georgetown '63, Waterbury
Mashman, J. H., Vermon '65, Danbury
Masi, A. V., New Jersey Coll. Med. '62, Bridgeport
Masry, I. S., Cairo Un. '45, Danbury
Mass, H., Leiden '56, New Haven
Massey, D. M., Hahnemann '36, Bridgeport
Massey, R. U., Wayne '46, Farmington
Massie, W. J., Meharry '47, New Haven
Masterson, T. J., Tufts '45, Norwich
Mastrangelo, A., Jr., Boston '39, Stamford
Mathews, J., Trivandrum '58, Enfield
Matteis, J. T., Yale '26, Kensington
Matthews, L. G., Seton Hall '63, Freehold, New Jersey (Hartford County)
Mattie, L. R., Yale '52, New Haven
Mattson, R. H., Boston '57, New Haven
Matyszewski, S. E., Yale '62, Waterbury
Mauck, F. T., Pennsylvania '57, Farmington
Mauks, C. W., Budapest '32, Danbury
Maurer, L. L., Yale '16, Woodbridge
Maurer, W. S., Yale '38, South Windham
Maxham, D. L., Vermont '53, Fairfield

Mayo, E. R., Tufts '38, Waterbury
McAlenney, P. F., Yale '29, New Haven
McAndrews, J. F., Columbia '46, Hartford
McCabe, E. B., Jefferson '44, Winsted
McCalley, S. W., Case Western '69, Greenwich
McCarthy, C. P. N., Univ. Coll. Cork '60, New Haven
McCarthy, J. D., Rochester '55, Hartford
McCarthy, J. C., Yale '62, Evansville, Indiana (Litchfield County)
McCarthy, R. E., Hahnemann '66, Middletown
McCaul, K. F., Nat'l. Univ. Ireland '50, Norwalk
McCawley, A., Glasgow Un. '48, Hartford
McCloskey, E. M., Jefferson '51, Hartford
McClure, P. H., Emory '64, Bristol
McCooey, J. H., State Univ. N. Y. '56, Hartford
McCormick, J. M., Dublin '47, Hartford
McCrann, D. J., Tufts '34, Hartford
McCreery, E. P., Jr., Virginia '42, Fairfield
McCue, M. P., Harvard '34, Waterford (Hartford County)
McCullough, C. D., N. Y. Med. Coll. '58, Bridgeport
McCullough, W. B., Columbia '65, New Haven
McDermott, G. M., Galway Med. School '58, Bristol
McDermott, J. F., Cornell '23, Honolulu, Hawaii (Hartford County)
McDermott, J. J., N. Y. U. '52, Danbury
McDonagh, P. H., Dublin '51, Greenwich
McDonald, J., Un. Glasgow '61, Glastonbury
McDonald, R. L., N. Y. Medical College '60, Roxbury
McDonnell, R. R., Jefferson '45, New Haven
McDowell, A. V., Albany '52, Middletown
McFarland, F. W., Vermont '28, Stamford
McFarland, W. J., Yale '39, New London
McFarland, W. J., Jr., Yale '72, New Haven
McGann, D. M., National Univ. Ireland '52, South Windsor
McGann, R. F., St. Mary's Hosp., London '58, Meriden
McGarry, J. F., Vermont '46, Bridgeport
McGarry, J. J., Yale '51, Darien
McGarry, M. E., Tufts '46, New Haven
McGaughey, J. D., III, Jefferson '44, Wallingford
McGourty, A. F., N. Y. Homeo. '18, Norfolk (Fairfield County)
McGowan, G. E., Laval '57, Hartford
McGowan, T. S., Tennessee '32, Storrs (Windham County)
McGrath, B. J., Yale '59, Guilford
McGuane, R. M., N.Y. Med. Coll. '53, Thompsonville
McGuire, C. W., New York '61, New Haven
McIlroy, P. T., Queen's 16, Danbury, New Hampshire (Fairfield County)
McIntyre, F. P., Vermont '42, Stamford
McKay, D., Queen's Univ. '56, Middletown
McKee, J. B., Jr., Virginia '59, New Haven
McKee, D. R., N. Y. U. '59, Stamford
McKeehan, F. R., Rochester '50, New London
McKendree, C. G., Virginia '43, Greenwich
McKenna, J. F., California '48, Torrington
McKeon, J. J., Hahnemann '39, Hamden
McKeon, W. F., New York '59, Norwich
McKnight, R. S., Pittsburgh '45, Hartford
McKnight, W. K., Pittsburgh '35, Bridgeport
McLanahan, S. M., Wayne St. '73, Putnam
McLean, B. A., Maryland '63, Hartford
McLean, C. E., Yale '45, Hartford
McLean, T. S., Jr., Vermont '34, Stratford
McLeod, C. E., Vermont '34, Middletown
McLoughlin, M. J., Nat'l. Un. Ireland '60, New Haven
McLoughlin, P. J., New York '58, Bridgeport
McNamara, J. R., Georgetown '61, Norwalk
McNerney, J. C., Jefferson '27, Stamford
McNulty, T. F., Georgetown '32, Hartford
McSweeney, J. J., Cornell '66, Stamford
Meacham, C. T., Pennsylvania '30, Stamford
Mead, P. H., Columbia '54, Hartford
Meehan, B. J., Lausanne '61, Newtown
Mehta, S. S. R., Univ. of Rajasthan '68, Stamford
Meia, H. B., Nacional De Cordoba '63, Milford
Meigs, J. W., Harvard '40, New Haven
Meisner, B. M., Rochester '60, Manchester
Mekrut, J. A., St. Louis '31, Sun City Center, Florida (New Haven County)
Mellisy, A., Long Island Coll. Med. '43, South Kent
Melmed, R. M., Jefferson '56, Greenwich
Melton, A. R., S. U. N. Y. Downstate '70, Storrs (Windham County)
Meltzer, S. B., Long Island '44, Bridgeport
Mendelsohn, W., Johns Hopkins '33, Hamden
Mendelson, L. M., Med. Coll. Virginia '65, Hartford
Mendillo, J. J., Columbia '45, New Haven
Mendoza, J. P., Jr., Santo Tomas '68, Bristol
Mendoza, R., Mexico '50, Norwalk
Meno, G. P., Geneva '59, Norwalk
Menousek, J. A., Vermont '32, Juno Beach, Florida (Hartford County)
Mensch, A. H., St. Un. New York '62, New London
Menzer, A., Un. of Basel '39, West Hartford
Meo, R. C., George Washington '34, Waterbury
Merdinolu, M. A., Istanbul '56, Norwalk
Mergenthaler, F. W., New York '61, Bridgeport
Meridy, H. W., Un. Vermont '66, Hartford
Mermann, A. C., Johns Hopkins '47, Guilford
Merriman, H., Columbia '36, Waterbury
Mertz, J. J., Harvard '61, Southington
Meshken, J., Rush '37, Bridgeport
Messina, M. C., Tennessee '27, Clearwater, Florida (Hartford County)
Messinger, H. J., Basel '39, Fairfield
Messore, G., Univ. of Naples '50, Milford
Mestel, R., Un. Vienna-Austria '34, West Haven
Methot, L. G., Georgetown '58, Bridgeport
Meunier, J. L., Vermont '38, Torrington
Meyer, J. L., Long Island '49, Putnam
Meyer, L., Albert Einstein '68, Meriden
Meyers, R. A., Michigan '31, Watertown
Michael, A. H., Athens '53, Bridgeport
Michalka, J. J., St. Louis '58, Bridgeport
Micheels, L. J., Utrecht '47, Westport
Michel, L. I., Long Island '43, New Haven
Mickenberg, I. D., S. U. N. Y. '65, Southbury
Mickley, D. W., Tufts '71, Greenwich
Mickley, S. P., Harvard '71, Greenwich
Middleton, C. J., S.U.N.Y. '64, Danielson
Mignone, J., Yale '33, New Haven
Milano, A. F., Nat'l, Un. Ireland '66, Woodbridge
Milano, M. F., Nat'l. Un. Ireland '66, Clinton (New Haven County)
Milano, N. A., Georgetown '27, West Haven
Milazzo, N. J., State Univ. N. Y. '54, Derby
Milewski, S. A., Dublin '56, Manchester
Milici, J. J., Hahnemann '40, West Haven
Milikow, E., N. Y. U. '64, Hartford
Millard, D. H., Georgetown '46, Greenwich
Millen, S. R., George Washington '38, New Haven
Miller, B., Boston '51, Bloomfield
Miller, D. E., Hahnemann '59, Middletown
Miller, D. F., Yale '56, Derby
Miller, G. R., Tufts '39, Manchester
Miller, H. B., Rush '33, Hartford
Miller, H. K., Columbia '32, Stamford
Miller, J. M., Albany '67, Bloomfield
Miller, L. W., Boston '67, Hartford

Miller, M. M., St. Un. N. Y. '51, Cheshire
Miller, R. B. Loyola Univ. '42, Newtown
Miller, R. G., Tufts '51, Danbury
Miller, S. M., Tulane '41, Bloomfield
Milles, S. S., Rochester '55. New Haven
Mills, B. L., Vermont '25, Northfield, Ohio (New London County)
Mills, C. W., Cornell '38, Norwalk
Milone, H. S., Georgetown '50, Hamden
Milone, J. E., Naples '39, Norwich
Milstone, J. H., Johns Hopkins '37, New Haven
Milyko, A. B., Columbia '55, West Hartford
Minasian, D. J., Women's Med. College '71, Enfield
Mino, M. E., Universidad Central '52, Wethersfield (Litchfield County)
Minor, J. V., Jr., Georgetown '46, Norwalk
Minor, L. W., Yale '32, Middletown
Minot, H. D., Jr., Harvard '50. Norwalk
Mintell, D. F., Jefferson '64, Glastonbury
Mirabelli, V., Padua '53, Bristol
Mirabile, C. S., Jr., McGill '63, Sharon
Mirabile, C. S., McGill '30, Farmington
Mirabile, T. J., Georgetown '37, East Hartford
Mirkhani, M., Tehran '51, Cheshire
Mirrer, E., Geneva '65, Waterbury
Miselis, F. J., Boston '45, Uncasville
Missier, P. A., Un. Bologna '54, Greenwich
Misuk, J. F., Georgetown '32, Meriden
Mitchell, G. V., McGill '38, Torrington
Mittelman, J. A., Pennsylvania '48, Hartford
Mittelmann, M., Chicago '57, Hartford
Mizak, D. J., Jefferson '68, Huntington
Mlynarski, J. A., Georgetown '39, New Britain
Moadel, M. M., Tehran '59, Westport
Moalli, D. E., Boston '61, New London
Moench, J. C., Rochester '45, New Haven
Mogil, M., Buffalo '39, New Haven
Moll, D., Tufts '70, Derby
Molloy, E. M., N. J. Coll. Med. '66, Fairfield
Molloy, P. M., Yale '59, New London
Molloy, R. J., Cornell '48, Hartford
Molnar, G. J., Georgetown '43, Bridgeport
Moloney, D. R., Galway '59, Hartford
Molumphy, P. E., Yale '44, New Haven
Mombello, G. E., Albany '64, New Haven
Monagan, T. M., Harvard '40, Waterbury
Mongillo, F., Med. Coll. Va. '28, New Haven
Montano, C., Albany Med. Coll. '72, Old Saybrook
Montgomery, J. S., Southwestern '61, New Haven
Montimurro, J. A., Yale '52, Greenwich
Montoni, E. J., Georgetown '55, West Simsbury (Litchfield County)
Moody, P. C., Case Western Reserve '69, New Britain
Moon, W. K., Catholic Med. Coll. '64, Torrington (Hartford County)
Mooney, J. P., N. Y. Med. Coll. '56, Shelton (New Haven County)
Mooney, S., Tufts '27, Bridgeport
Moore, C. D., Queen's '28, Lehigh Acres, Florida (Fairfield County)
Moore, E. J. T., Tufts '48, Waterbury
Moore, M. F., State Univ. N. Y. '55, New Canaan
Moore, M. R., Queen's '29, Spring Hill, Florida (New London County)
Moore, R. W., N. Y. U. '43, Sharon
Moore, W. J., Columbia '21, Cheshire
Moreschi, F. P., Bologna '51, Meriden
Morgan, K. R., Yale '42, Fairfield
Morgan, L. G., N. Y. Med. Coll. '49, Stamford
Morgan, W. O., Georgetown '30, Westport
Morgan, W. S., Yale '51, New Haven
Morhardt, C. E., N. Y. Med. Coll. '61, West Hartford
Moriarty, J. P., Vermont '47, Stamford
Morley, D. C., Queen's '56, Greenwich
Morrill, H. F., Harvard '25, Wolcott
Morris, F. R., Maryland '41, Bridgeport
Morrison, D. W., Columbia '40, Manchester
Morrison, J. B., Yale '48, Orange
Morrison, J. E., Maryland '46, Norwich
Morrison, M. A., N. Y. U. '65, Fairfield
Morrison, M. J., Bowman Gray '72, Danbury
Morrison, R. F., N. Y. U. '64, Meriden
Morrissett, L. E., Med. Coll. Va. '30, Richmond, Virginia (Fairfield County)
Morrissey, V. J., Georgetown '32, Westport (New Haven County)
Morrow, H. S., Columbia '40, New Milford
Morse, E. E., Harvard '58, Farmington
Morse, W. J., Vermont '61, New London
Morse, W. J.,Vermont '31, Sanibel, Florida (New London County)
Moses, J. A., Trivandrum, India '58, Fairfield
Moskowitz, H., St. Univ. New York '59, West Hartford
Moskowitz, R. I., S.U.N.Y. '67, Willimantic
Moskowitz, R. S., S.U.N.Y. Downstate '69, Westport
Moss, A. M., Toronto '47, Fairfield
Moss, R., St. Univ. New York '63, New Britain
Mostel, A. P., Albert Einstein '60, Stamford
Mott, F. E., Buffalo '41, New Haven
Motyka, S. J., Arkansas '38, Fullerton, California (Hartford County)
Moulyn, A. C., Utrecht '30, Stamford
Moyer, W. T., Jr., Pennsylvania '47, Manchester
Moynahan, P. A., Med. Coll. Pennsylvania '68, Waterbury
Mozzicato, S., Louisville '70, Hartford
Muangman, P., Chiengmai Un. Hosp. '64, Hartford
Mucha, T. F., Jefferson '64, Hartford
Mueller, R. E., Yale '63, Hartford
Mujeeb, M., Osmania Med. Coll. '60, Stamford
Mujtaba, Q., Dow Med. College '67, New Haven
Mulaire, V. J., Boston '39, Stamford
Mulford, E. H., II, Duke '41, Norwalk
Mulhern, P. H., Birmingham '50, North Haven
Mulligan, T. M., Boston Un. '38, Waterbury
Mullin, R. L., Tufts '55, Meriden
Munch, R. V., St. Louis '62, Winsted
Murcko, W. J., Marquette '37, Torrington
Murphy, A. G., Cornell '40, New London
Murphy, C. A., Long Island '33, Chatham, Massachusetts (Fairfield County)
Murphy, E. F., Tufts '55, Windsor
Murphy, J. C., Columbia '32, New York City, New York (Fairfield County)
Murphy, J. D., Maryland '54, Hartford
Murphy, J. J., Tufts '43, East Hartford
Murphy, J. M., Cornell '60, Greenwich
Murphy, J. P., N. Y. Med. Coll. '50, Cos Cob
Murphy, O. L., Vermont '21, Simsbury
Murphy, R. D., Tufts '47, Wethersfield
Murphy, T. F., Jefferson '33, West Hartford
Murray, J. G., N. Y. U. '43, Greenwich
Murray, J. H., Temple '67, Hartford
Murray, J. T., N. Y. U. '47, New London
Murray, W. C., Tufts '53, Bristol
Murray, W. J., Jr., Cornell '47, New London
Musto, A., Georgetown '68, Bridgeport
Musto, D. F., Univ. Washington '63, New Haven
Myerson, D. A., Columbia '65, Derby

Myerson, M., Tufts '61, Hartford
Myerson, P. J., Columbia '65, Derby
Mylon, E., Berlin '21, New Haven

Nadel, H., Buffalo '60, Glenbrook
Nadel, M. S., Columbia P & S '62, Middletown
Nagaraja, U., Grant Med. Coll. '60, New Milford
Nagle, J. A., Jefferson '55, Stamford
Nagourney, D., Long Island '36, Bridgeport
Naiman, P. T., Columbia '63, Milford
Nair, S., Madras '51, Norwalk
Nakhoul, J., Geneva '53, Hartford
Nanni, F. P., Lausanne '57, Waterbury
Narayanan, C. N., Calicut '64, Hartford
Narowski, C. A., Temple '54, Derby
Narowski, J. J., Tufts '43, Derby
Nathanson, R. B., Albany '66, West Hartford
Neff, W. E., Jr., Columbia '33, Cheshire
Neidlinger, W. J., Cornell '33, Hartford
Neill, M. H., Columbia P. & S. '43, Hartford
Neibel, K. G., Louvain '70, Waterbury
Neilson, K. C., Tufts '69, Putnam
Nejad, I. F., Teheran '57, Waterbury
Nejame, F. F., Mexico '60, Waterbury
Nelligan, D. J., Yale '55, Westbrook (New London County)
Nelson, R. K., Minnesota '59, New Britain
Nelson, W. N., George Washington '26, Cromwell
Nemec, J. M., Tufts '66, Old Greenwich
Nemoitin, B. O., Long Island '34, Stamford
Nepomuceno, M. N., St. Tomas '52, Willimantic
Nesbitt, K. A., Albany '51, Torrington
Nesi, R. M., Univ. Bologna, Italy '65, Brookfield
Neth, W. F., McGill '55, Trumbull
Neumann, C. P., Pennsylvania '43, New Canaan
Neumann, H. H., Univ. Vienna '32, New Haven
Nevins, R. A., Georgetown '51, Fairfield
Nevulis, A. V., Vermont '38, New Britain
Newberg, M. E., Columbia '63, Greenwich
Newell, R. C., Boston '56, Bloomfield
Newman, A. A., Long Island '42, Bridgeport
Newman, H. R., Toronto '35, New Haven
Newman, R., Johns Hopkins '30, Woodbridge
Newman, R. A., Louvain, Belgium '70, Hartford
Newman, R. D., Un. California '62, Greenwich
Newman, R. J., S.U.N.Y. '45, Waterbury
Newton, R. F., Yale '47, Hamden
Nezhad, F. M., Tehran '56, Waterbury
Nicholl, R. G., Phila. Coll. Osteo. Med '33, Greenwich
Nichols, C. W., Vermont '20, Wellfleet, Mass. (Fairfield County)
Nichols, E., Yale '39, Hartford
Nichols, F. L., Columbia '42, Hartford
Nicholson, R. E., Tulane '42, Hartford
Nickou, N., Univ. Cincinnati '49, Branford
Niederman, J. C., Johns Hopkins '49, New Haven
Niejadlik, D. C., Univ. N. Y. '67, Portland
Niell, J. P., Nat'l. Un. Cordoba-Argentina '65, Stamford
Nielsen, T. M., Copenhagen '38, New London
Niemann, C. P., Wurzburg '52, Sherman
Niesyn, E. D., Georgetown '53, Bridgeport
Nino, A. F., Nat'l. Un. Colombia '63, Hartford
Nix, H. R., Alberta, Canada '61, Manchester
Nixon, J. T., N. Y. U. '51, New Haven
Noble, R., Un. Santo Tomas '67, Waterbury
Nocks, J. J., Pennsylvania '68, West Haven
Nolan, J. J., Pittsburgh '42, Stamford
Nolan, J. O'L., Tufts '40, Hartford
Nolan, T. F., Yale '49, Greenwich
Nolasco, D. R., Coimbra '51, New Haven
Noniewicz, S. J., St. Louis '56, New Britain
Noonan, R. H., Long Island '47, Bridgeport
Norbert, G. F., Tufts '65, Avon
Norman, P. S., Tufts '56, Manchester
Norrington, E. G., N. Y. Med. Coll. '39, Norwalk
Northman, F. F., Breslau '34, Bridgeport
Northrop, R. A., Jefferson '32, Westport
Norton, W. S., Columbia '37, Wallingford
Nosce, L. V., Sto. Tomas '63, Manchester
Noto, P. J., New Jersey '69, New Haven
Nourizadeh, Ali-Reza, Tehern, '59, New Britain
Nova, S., Cincinnati '67, Hartford
Novack, S. N., S. U. N. Y. '66, Norwalk
Nuland, S. B., Yale '55, Milford
Nunes, M., Howard '54, Waterbury

Oberkirch, A. M., N.Y.U. '68, New Haven
O'Brasky, L., Jefferson '22, New Haven
O'Brien, F. H., Columbia '38, Waterbury
O'Brien, F. J., Boston '54, Hartford
O'Brien, G. J., McGill '63, Willimantic
O'Brien, J. E., Vermont '61, Hartford
Oceretko, J., Friedrich-Alexander Un. '50, Bristol
O'Connell, C. G., Un. Coll. Ireland '62, Vernon
O'Connell, E. B., Yale '41, New Haven
O'Connell, E. J., Tufts '34, Farmington
O'Connell, J. D., Harvard '39, Hartford
O'Connell, M. F., Yale '22, West Hartford
O'Connell, P. B., Hahnemann '67, Wethersfield
O'Connell, P. H., Loyola '29, Norwich
O'Connell, R. L., Columbia P & S '51, Stamford
O'Connell, T. J., N. Y. Med. '48, Hartford
O'Connor, C. F., Un. Coll. Galway '58. Glastonbury
O'Connor, L. E., Univ. of Galway '55, Rockville (Hartford County)
Oesau, H. T., Jefferson '26, Stratford
Oesau, H. T., Jr., Jefferson '62, Bridgeport
Ogilvie, J. B., Yale '34, Stamford
Ohanesian, J. H., Hahnemann '49, New Britain
O'Hayre, W. L., Un. Colorado '59, Hartford
O'Hurley, J. G., Jefferson '52, Hartford
Olanoff, M., Boston Un. '66, Norwalk
Olejnik, W., Rijksuniversiteit '54, Meriden (New London County)
O'Looney, J. J., Jr., Jefferson '45, Bridgeport
Olore, L., Tufts '43, Waterbury
Olsavsky, J. C., Georgetown '43, Bridgeport
Olsen, R. C., Long Island '45, New London
Olson, L. E., Yale '54, New Haven
O'Neil, T. J., New York Med. Coll. '60, Easton
O'Neil, V. D., Un. McGill '41, Newington
O'Neill, J. J., Tufts '48, New Haven
Onglingswan, W. T., Philadelphia '61, Willimantic
Opinsky, M., Georgetown '46, Hartford
Opsahl, J. C., Alberta '54, Boston, Mass. (New Haven County)
Orbach, E. J., Berlin '24, New Britain
O'Regan, P. T., National '52, Meriden
O'Reilly, H. F., St. Un. N. Y. '53, New Britain
Orgun, I. N., Istanbul '53, Avon
Orlandi, R. J., N.Y. Med. Coll. '68, New Milford
Orlins, M. D., Amsterdam '56, Norwalk
Orlowski, A. W., Tufts '36, Torrington
Ormrod, J. K. T., McGill '43, Hartford
Ornston, D. G., Jr., Pennsylvania '59, New Haven
O'Rourke, G. W., New York Med. Coll. '61, Fairfield
O'Rourke, J., Georgetown '49, Farmington
Orphanos, J. P., N. Y. Med. Coll. '58, Greenwich
Orr, H. D., Boston '48, Norwalk
Orr, J. T., Columbia '52, Danbury
Orth, R. H., Cornell '53, Stamford

Ortiz, F., Cayetano Heredia Med. Sch. '70, Meriden
Osadchey, L. M., Upstate Med. Ctr. '63, Meriden
Osborn, D., Yale '57, Norwalk
Osborn, D. J., Cape Town '62, Waterbury
Oster, K. A., Cologne '34, Bridgeport
Ostriker, M., Bellevue '52, Stamford
Ostriker, P. J., State Univ. N. Y. '50, Stamford
Ostrov, M. R., Chicago '63, Waterbury
Otis, F. N., Tufts '18, Bloomfield (New Haven County)
Otis, I. S., George Washington '17, Meriden
Otis, R. D., Yale '49, Hartford
O'Toole, P., Trinity '53, Norwich
Oviedo, A., Javeriana Univ. '65, Hartford
Owens, A. P., McGill '37, Bridgeport
Owens, G., Harvard '50, New Britain
Oxley, L. L., Meharry Med. Coll. '59, Storrs (Windham County)
Oxnard, E. W., Harvard '36, Cheshire
Ozcomert, S., Ankara '47, Stamford
Ozenberger, J. M., Missouri '58, Clinton (New Haven County)
Ozonoff, M. B., Northwestern '54, Newington

Paardenkooper, J., Utrecht '58, Moodus
Pace, S. F., Rome '52, Wethersfield
Padula, R. D., Cincinnati '30, Norwalk
Paggioli, J. W., Georgetown '56, Meriden
Pagliaro, J. J., Georgetown '37, Shelton
Painter, R. L., Indiana '59, Putnam
Painter, R. W., Tennessee '46, Hartford
Palermino, D. A., Tufts '58, Hartford
Palker, Neil A., Goa Medical College '68, Groton
Palluotto, W. V., N. Y. Med. Coll. '50, New Haven
Palm, C. R., N. Y. U. '63, Torrington (New Haven County)
Palma, J. F., Vermont '59, East Hartford
Palmer, W. M., Cornell '51, New London
Palmieri, M. L., Yale '32, Middletown
Palomba, E. A., Georgetown '59, Enfield (Tolland County)
Panettieri, A. J., Vermont '37, Bridgeport
Pang, S. C., Darien Med. Sch '56, Norwalk
Pantaleo, C. V., Creighton '43, New Haven
Panzer, G. R., Harvard '55, Thompson
Papa, J. S., Tufts '28, Fort Lauderdale, Florida (Hartford County)
Papowitz, A. J., Louisville '66, Norwalk
Pardi, M. T., Pisa-Italy '61, New Haven
Pardi, V. M., Un. Pisa '60, Milford
Parente, L., Emory '31, Hamden
Parisi, A. J., Tufts '44, New Haven
Park, S., Seoul Nat'l Univ. '49, North Grosvenordale
Park, Y. J., Seoul Nat'l. Un. '63, Bridgeport
Parke, D. W., Ohio '50, Meriden
Parker, L. P., McGill '66, Hartford
Parker, R. L., Western Ontario '41, Bridgeport
Parlato, H. A., N. Y. U. '36, New Britain
Parlato, M. A., Yale '08, Derby
Parrella, G. S., Yale '41, Milford
Parrella, L. A., Tufts '34, North Haven
Parshley, P. F., Pennsylvania '27, Pinehurst, North Carolina (Hartford County)
Parthenis. A., Western Ontario '61, Norwich
Partridge, W. P., Harvard '20, Fort Lauderdale, Florida (Hartford County)
Pascal, T. J., Rush '31, Bridgeport
Pascale, J. F., Univ. Chicago '59, East Amherst, New York (New Haven County)
Pascual, R. S., Un. of the East '64, New London
Pasetto, E., Vermont '36, Waterbury
Paslawski, W., Akademia Medzcyna Poland '54, Windsor
Pasquariello, D. W., Naples '36, Bridgeport
Passarelli, M. N., Yale '59, New Haven
Passaretti, M., Tufts '68, Manchester
Pastel, H., Columbia '48, Manchester
Pasternak, H. S., SUNY '60, Hartford
Pasternak, M., Toronto '36, Sarasota, Florida (New Haven County)
Pathak, J. A., Baroda Med. Sch. '66, Bridgeport
Pathak, K. J., B. J. Med. Sch. '63, Bridgeport
Patil, V. M., Grant Med. College '68, Danbury
Patterson, E. S., Iowa '54, Meriden
Patterson, H. C., Bowman Gray '45, Danbury
Patterson, J. W., Western Reserve '49, Farmington
Patterson, M. B., Boston '45 Greenwich
Pattillo, J. G., Un. Geneva '64, Windsor
Paulhus, J. J., New Jersey '70, Putnam
Paust, J. C., Wisconsin '67, Orange
Pavlo, L. J., Mainz, W. Germany '55, Derby
Pavlo, M. M., Univ. Prague '45, Derby
Peacock, A. U., Rush '33, Hartford
Pearce, M. G., Texas '22, Austin, Texas (Fairfield County)
Pearlstein, A. T., Chicago '63, Derby
Pearlstone, A. D., State Univ. N. Y. '55, Fairfield
Peck, A. S., Jr., N.Y.U. '67, Hartford
Peck, B. C., Long Island '31, New Britain
Peck, M. S., Western Reserve '63, New Preston
Pella, J., Havana '42, Middletown
Pellegrino. E. D., N.Y.U. '44, New Haven
Pelliccia, O., Jr., Johns Hopkins '39, New Haven
Pelz, K., Vienna '32, Clinton (New Haven County)
Pembrook, R. C., Minnesota '63, New Haven
Pendagast, E. L., Jr., New York '58, Fairfield
Penner, S. L., Columbia '34, Bridgeport
Pennington, R. B., Virginia '51, Middletown
Pentz, P. G., Jefferson '61, Hartford
Pepe, A. J., Maryland '35, Ansonia
Pepe, V., Yale '46, Meriden
Pepper, D. S., Pennsylvania '32, Gladwyne, Pennsylvania (Hartford County)
Perakos, G. P., Georgetown '32, Kensington
Peralta, C., Santo Domingo '50, Bridgeport
Perkins, J. A., McGill '41, Hartford
Perkins, J. H., Pennsylvania '66, Hartford
Perlin, L., Lausanne '59, Middletown
Perlis, S. J., Michigan '50, Westport
Perlman, A. M., N.Y.U. '58, West Hartford
Perlman, J. M., State Univ. N. Y. '63, Bridgeport
Perlman, S., N.Y.U. '56, Hartford
Perlswig, E. A., Pennsylvania '48, New Haven
Pernetti, A. M., N. Y. Med. Coll. '29 Niantic (Middlesex County)
Perras, D. A., Maryland '59, New Haven
Perry, D. D., N. Y. Med. Coll. '45, Bristol
Pesce, J. R., Louvain '67, Bridgeport
Pesiri, R. A., Ottawa '59, Stamford
Persons, R. E., Syracuse '43, Meriden
Pet, D., Maryland '62, Meriden (Hartford County)
Peters, D. H., Tufts '56, Kent
Peterson, C. G., Jr., Yale '55, Willimantic
Peterson, D. M., Pennsylvania '56, New London
Peterson, R. C., Yale '48, Stratford
Peterson, W. S., Yale '71, Waterbury
Petrea, I., Bucharest Univ. '51, New Haven
Petrelli, E. A., Georgetown '66, New Haven
Petrelli, J., Yale '25, New Haven
Petrie, S. J., Temple '50, Ansonia
Petrillo, C., Yale '38, New Haven
Petruschow, A., Frankfurt '48, Newtown
Pezzimenti, J. F., Creighton '65, Danbury

Phelps, M. O., McGill '29, Hartford
Philbrick, C. J., Jr., Tufts '55, Milford
Phillips, C. C., Louisville '49, New Haven
Phillips, K. T., Tufts '19, El Cajon, California (Windham County)
Phillips, N. T., Boston '44, Norwich
Phinney, A. O., Columbia '53, Hartford
Piacente, S. S., Rochester '40, Hartford
Piazza, G. J., Boston '32, New Haven
Piccirillo, A. V., Yale '54, Wallingford
Piccolo, P. A., Maryland '37, New Haven
Pickett, L. K., Yale '44, New Haven
Pierce, J. A., Duke '55, Wethersfield
Pierce, J. A., Georgetown '50, Newington
Pierce, J. M., Tufts '62, Winsted
Pierson, L. A., Tufts '27, Meriden
Pierson, P. S., Columbia '44, Essex
Pike, M. M., Harvard '25, Farmington
Pilot, M. L., Illinois '48, New Haven
Pimpinella, R. J., Rochester '60, Torrington
Pina, B. D., Howard '69, East Hartford
Pineiro, E., Un. De Navarda '66, Bridgeport
Pinkes, A. H., Lausanne '62, New Haven
Pinkes, S., Tufts '50, Hartford
Pinn, A. S., Laval '29, New Haven
Piotrowska-Nyerick, K. I., Warsaw '57, Orange
Pious, W. L., Jefferson '32, Clewiston, Florida (New Haven County)
Piro, J. F., Georgetown '56, Norwalk
Piscatelli, R. L., Tufts '61, Waterbury
Pisetsky, M. M., Tufts '61, Hartford
Pitegoff, C. H., St. Louis '40, New Haven
Pitegoff, G. I., St. Louis '37, Hartford
Pito, V. J., de Napoli '56, New Britain
Pitts, N. E., Sheffield, England '52, Stonington
Pizzo, P. S., N. Y. U. '45, Hartford
Plakins, H. G., Univ. of Zurich '52, Wallingford
Plankeel, J. P., Northwestern '69, Mystic
Platt, J. M., Physicians & Surgeons '57, Hartford
Platz, E. J., Pennsylvania '43, Glastonbury
Platz, J., Cologne '31, Manchester
Pleban, W. E., Louvain '64, Bridgeport
Pocock, H. D., Jr., Univ. Cincinnati '43, Fairfield
Poczabut, J. S., Vermont '41, Stamford
Poirier, T. M., Georgetown '34, Windsor
Pola, W. E., Louisville '32, New Britain
Polayes, I. M., Albany '59, New Haven
Polito, J. C., N. Y. Med. Coll. '52, Torrington
Polivy, C., N. Y. U. '42, Hartford
Polsky, E., Ghent '59, Orange
Pool, J. L., Columbia '34, Norwalk
Pope, R. H., Johns Hopkins '45, Bridgeport
Portnoy, L. M., St. Univ. New York '59, Bridgeport
Posada, H., Un. Antioquia '62, Waterbury
Poupko, G. G., Jefferson '69, Waterbury
Poutas, J. J., Harvard '30, Old Greenwich
Poverman, D., Vermont '32, New Haven
Powell, B., Havana Un. '60, Norwich
Powell, C. P., Howard '48, Hartford
Powell, N. R., Yale '60, Wethersfield
Powers, E. D., New York '52, Hartford
Pranglev, A. G., Jr., Cornell '52, Greenwich
Pratt, H. S., Louisiana State '58, Meriden
Preble, C. R., Washington '53, Glastonbury
Prescott, B. D., McGill Univ. '61, Storrs
Prestley, W. F., Harvard '40, Hartford
Preston, N., Albany '47, Waterbury
Preston, T. R., Yale '25, West Hartford
Price, J. T., New York Med. Coll. '63, Glastonbury
Prignano, J. V., Georgetown '40, Manchester
Prince, M. L., New Jeresy '61, Danbury
Prindle, C. G., Temple '37, Hartford
Pringle, E. W., Tufts '66, Higganum
Prins, S. A., Amsterdam '31, Middletown
Prioli, K. M. Seton Hall '60, Norwich
Privitera, J. H., Med. Coll. Virginia '69, Torrington
Prokesch, C. E., N. Y. Med. Coll. '49, New London
Prokop, E. K., Florida '70, New Haven
Prokop, J. D., Yale '59, Stamford
Prosnitz, L. R., St. Univ. New York '61, New Haven
Prosser, F. D., Cornell '28, Putnam
Prouty, R. L., Ohio St. '49, Norfolk
Pruett, K. D., Tufts '69, New Haven
Prunier, J. H., Cornell '56, Greenwich
Pua, P. K., Philippines '58, Bridgeport
Pukay, B., Ohio St. '55, Mystic
Pulaski, J. E., Georgetown '44, Hartford
Pullen, E. M., Cornell '24, New Canaan
Pullen, R. D., Yale '54, Windsor
Pullen, R. W., Yale '21, Landstuhl, Germany (Hartford County)
Purcell, D. P., Nat'u Univ. Dublin, Ireland '56 Manchester
Purcell, J. J., St. U. N. Y. '63, Hartford
Puri, S., All India Insti. of Med. Sciences '68, Farmington
Purnell, M. A., Boston '49, Rockville
Purnell, O. J., Cornell '42, Rockville
Purney, J., McGill '39, Bristol
Pyrtek, L. J., Rush '42, Hartford
Pyun, K. S., Severance Union Med. Coll. '57, Meriden

Querijero, G. B., Un. East Philippines '64, Waterbury
Quigley, W. F., New York Med. Coll. '56, Waterbury
Quintiliani, A., Harvard '29, Norwich
Quinto, E. L., Lausanne '59, Hartford

Rabinovitch, P. I., Vermont '63, Waterford
Rablen, E. C., Graz, Austria '50, Quaker Hill
Rabuffo, J. V., Georgetown '65, Middletown
Raccuglia, G., Rome, Italy '50, New Haven
Rackliffe, R. W., McGill '52, New Britain
Radding, P., Harvard '48, Hartford
Radom, M. M., Jefferson '25, Hartford
Radowiecki, M. W., N. Y. Med. '43, Hamden
Raff, I. L., N. Y. Med. Coll. '64, Danbury
Raff, N. C., Johns Hopkins '61, Westport
Raffa, J., Columbia '34, Glastonbury
Raffaele, F. J., W. Ontario '30, Stamford
Rafkind, A. B., Paris '37, Middletown
Ragaza, A. T., Univ. of The East '66, Milford
Ragaza, E. P., Santo Tomas '63, New Haven
Ragland, S., Jr., Med. Coll. Virginia '50, Colebrook
Ragusa, R. P., Georgetown '51, Bridgeport
Raheb, E. B., Georgetown '56, Danielson
Rainville, T. J., St. Univ. New York '61, Stamford
Ralph, F. T., Temple '43, Darien
Ramachandran, M., Colombo, Ceylon '66, Bridgeport
Ramirez, L. M., National Univ. '54, Bridgeport
Randolph, M. F., Rochester '43, Danbury
Ranganathan, V., Madras Med. Coll. '53, Rocky Hill
Ranieri, A., Jr., Un. Virginia '71, New Haven
Ranish, M., Upstate '67, Waterbury
Rankin, B. F., McGill '19, Hartford
Rankin, C., Nebraska '43, West Hartford
Ransome, O. J., McGill '69, Naugatuck
Raphael, M. C., Leiden '53, Southbury
Rapkin, R. M., Tufts '65. Guilford
Rapoport, A. M., S. U. N. Y. '66, Stamford
Rapoport, L. M., N. Y. Med. Coll. '50, Milford
Rapoport, M., Cincinnati '64, Bridgeport
Rappaport, L. N., Columbia '64, Bristol
Rasmussen, H. N., Tufts '25, Uncasville

Rathey, U. K., Munich '53, Wallingford
Rauch, E. A., Far Eastern '65, Cheshire
Rawls, C., Med. Coll. Va. '31, Stamford
Raycroft, J. F., St. Univ. N. Y. '61, Hartford
Read, F. A., Yale '34, Riverside
Reade, E. G., Jefferson '16, Southern Pines, North Carolina (Litchfield County)
Reardon, G. E., Albany '56, Hartford
Reber, R. E., Columbia '62, Greenwich
Redlich, F. C., Vienna '35, New Haven
Redmond, A. P., Guy's Hosp. Med. Sch. '57, Greenwich
Reed, D. P., Yale '59, Waterbury
Reed, J. F., Cornell '41, Hartford
Reed, R. L., Temple '63, Huntsville, Alabama (Middlesex County)
Reichenbach, A. E., Tufts '38, Waterbury
Reichgut, M. H., Pennsylvania '64, Bridgeport
Reidy, J. C., George Washington '43, Winsted
Rein, J. M., Columbia P & S '63, Old Greenwich
Reinfrank, R. F., Long Island '49, Hartford
Reinhard, W. J., Jefferson '51, Southport
Reiser, M. F., Cincinnati '43, New Haven
Reiss, O., State Univ. N. Y. '51, Bristol
Reitwiesner, A. G., Long Island '38, New Fairfield
Rem, E. A., Long Island '47, New Canaan
Renda, J. L., Yale '68, Waterbury
Renehan, J. M., Tufts '28, Ansonia
Rentsch, J. B., Virginia '55, Glastonbury
Rentsch, S. B., Michigan '23, Derby
Rentsch, S. B., Jr., Virginia '54, Glastonbury
Rentz, R. E., Cornell '55, West Hartford
Resnick, J. S., Pennsylvania '59, Stamford
Resnik, E., McGill '30, New Britain
Resnik, H., Johns Hopkins '31, Bridgeport
Resnik, W. H., Johns Hopkins '21, Stamford
Reyelt, W. P., Jr., Med. Coll. Virginia '60, Sharon
Reyes, C. S., Santo Tomas '68, Rockville
Reynolds, J. A., Tufts '36, Waterbury
Reynolds, R. G., Harvard '26, West Simsbury
Reynolds, W. M., Columbia '31, Stonington (Fairfield County)
Rha, C. K., Seoul National Univ. '64, Stamford
Rhame, H. E., Jr., George Washington '50, Fairfield
Rhee, S. S., Seoul Nat'l. Un. '58, Hartford
Rhinehart, J. W., N. Y. Med. Coll. '55, Newtown
Rhoades, E. J., Yale '43, New Haven
Ribner, H., Tufts '34, Fairfield
Ricca, R. A., Pennsylvania '40, Glastonbury
Riccio, F. J., Rome '42, Bridgeport
Riccio, J. S., St. Louis '37, Middlebury
Riccitelli, M. L., Yale '22, New Haven
Rich, C. F., Pennsylvania '64, Middletown (Hartford County)
Rich, J. N., L. I. C. H. '34, Terryville
Richar, W. J., Cornell '46, Stamford
Richards, N. R., Lausanne '55, Waterbury
Richards, W. R., Cornell '35, New Haven
Richman, D. P., N. Y. U. '42, South Norwalk
Richman, S. M., Washington '58, Bloomfield
Ridgway, W. S., Virginia '46, Stamford
Ridlon, H. C., Columbia P. & S. '58, Hartford
Riemer, H. O., Un. Innsbruck '39, Shelton (New Haven County)
Riendeau, F. M., Paris '27, Old Saybrook (Litchfield County)
Riendeau, P. L., Paris '27, Old Saybrook (Litchfield County)
Rifkin, B. G., Cape Town '54, New Haven
Rightmyer, E. R., Jefferson '55, West Haven
Rigney, B. F., Yale '67, New Haven
Rilance, A. B., McGill '31, New Haven
Riley, J. A., Yale '51, New Haven
Rimai, M. L., Bruxelles '66, Bloomfield
Rinaldi, M. J., St Louis '65, Hartford
Rinaudo, P. A., Torino '45, Berlin (New Haven County)
Rindge, N. P., Yale '35, Clinton
Ringrose, V. P., Jr., Rochester '56, New Britain
Rini, J. M., Harvard '68, Stamford
Riordan, C. E., Harvard '63, New Haven
Riordan, W. D., N. Y. Med. Coll. '43, West Hartford (New Haven County)
Ripps, R. A., Tufts '68, Danbury
Ritland, G. D., Stanford '66, Hartford
Ritter, M. E., Franfurt 50, Meriden
Roach, D. P., Nat'l Univ., Ireland '56, Shelton (New Haven County)
Roach, J. P., N. Y. Med. Coll. '58, Bridgeport
Robb, S. A., Cornell '40, Meriden
Robbins, D. I., Georgetown '62, Bridgeport
Robbins, J., Paris '37, Thompsonville
Robbins, K. M., Albert Einstein '67, Middletown
Roberge, G. E., Yale '38, Stratford
Roberts, D. J., Jr., Cornell '51, Manchester
Roberts, G. D., Dalhousie '60, Westport
Roberts, L. E., Un. Colorado '69, Hartford
Roberts, M. P., Yale '57, Hartford
Roberts, R. W., Cornell '58, New Britain
Robertson, A. R., Temple '42, Torrington
Robertson, R. W., Albany '66, Hartford
Robin, N. I., Downstate Med. Ctr. '65, Stamford
Robins, R. J., State Univ. N. Y. '62, Westport
Robinson, C. H., Jr., Yale '60, New London
Robinson, D., Johns Hopkins '42, Hartford
Robinson, F., Cornell '42, New Haven
Robinson, J. C., Vermont '45, Hartford
Robinson, L. A., Jr., Tufts '54, Danielson
Robinson, P. D., Jr., Un. Cincinnati '62, Hartford
Robinson, W. J., Long Island '21, Christiansted, St. Croix (Hartford County)
Robison, R. C., Yale '36, Stamford
Robitaille, G. A., Tufts '60, Waterbury
Robles, M. J., Philippines '58, Bristol
Rocco, M. P., Georgetown '41, Hartford
Rocco, A. R., Naples '57, West Haven
Rockwell, W. J., Albany '73, Bridgeport
Rodda, T. D., Loyola Univ. '61, Greenwich
Rodner, R. D., S.U.N.Y. '68, Manchester
Rodriguez, J. C., Santo Domingo '52, Stafford Springs
Roe, C. F., Univ. Aberdeen '55, New London
Rofrano, D. A., Georgetown '51, Wolcott
Rogers, H. C., Columbia P. & S. '55, West Hartford
Rogers, J. F., Duke '42, Stamford
Rogers, M. C., Johns Hopkins '32, Stamford
Rogers, O. F., Jr., Harvard '12, New Haven
Rogers, R. P., Harvard '25, North Chatham, Mass. (Fairfield County)
Rogers, W. J., N. Y. U. '48, Norwalk
Rogol, L., Long Island '33, Danbury
Rogol, O., Dalhousie '32, Seymour
Rogowski, J. P., Georgetown '56, Fairfield
Roh, C. E., Columbia '41, Hartford
Romaniello, R. J., Columbia '27, Elmwood
Romanos, D. R., Tufts '67, Torrington
Romeo, S. G., New Jersey '64, Manchester
Romero, R. O., Univ. of The East '67, Waterbury
Root, H. F. Jr., Tufts '55, New Britain
Root, J. H., Jr., Syracuse '43, Woodbridge
Root, M. T., Cornell '18, West Hartford
Root, S. A., Cornell '19, West Hartford

Rosahn, P. D., N. Y. U. ’28, Kensington
Rose, G. J., Boston Univ. ’47, Rowayton
Rose, T. H., Johns Hopkins ’63, Danbury
Rosen, T., Tufts ’33, Manchester
Rosenbaum, H. M., Utah ’48, Waterbury
Rosenbaum, H. T., State Univ. New York ’57, Middletown
Rosenbaum, N., Temple ’56, Bridgeport
Rosenberg, A. H., Columbia ’59, Greenwich
Rosenberg, B. L., McGill ’43 Danbury
Rosenberg, B. S., Louisville ’70, Waterbury
Rosenberg, C. H., Buffalo ’44, Stamford
Rosenberg, H. A., Vienna ’37, Bridgeport
Rosenberg, J. E., Northwestern ’66, Hartford
Rosenberg, M., Manitoba ’55, Hartford
Rosenberg, M. A. Lausanne ’54, Bridgeport
Rosenberg, M. Z., Yale ’49, Willimantic
Rosenberg, P. J., Tufts ’65, Norwich
Rosenberg, S., American Univ. Beirut ’39, Bridgeport
Rosenbloom, M. L., N. Y. U. ’60 Branford
Rosenblum, R. A., Albert Einstein ’67, New London
Rosenkranz, B. M., Chicago Med. Sch. ’66, West Hartford
Rosenthal, B. B., Bellevue ’30, Milford
Rosenthal, E. R., N. Y. U. ’67, Danbury
Rosenthal, I. I., Tufts ’56, Hartford
Rosenthal, M. B., Creighton ’34, Hartford
Rosenthal, R. L., Long Island ’38, Branford
Rosenworcel, E., S.U.N.Y. ’68, Hartford
Rosman, M., N. Y. U. ’67, Bridgeport
Rosnagle, R. S., Western Reserve ’57, New Haven
Rosner, F., Vienna ’37, Bridgeport
Ross, S. A., Cornell ’64, Camden, Maine (New Haven County)
Ross, W. D., State Univ. N. Y. ’48, Hartford
Rossbaum, R. P. Seton Hall ’62, Hartford
Rossi, J. G., Georgetown ’50, New Haven
Rossi, J. P., N. Y. Med. Coll. ’51, Westport
Rossi, M. A., St. Louis ’62, Hartford
Rosson, R. S., Harvard ’58, Hartford
Rost, D. M., Iowa ’63, Waterbury
Rostenberg, P. O., Arkansas ’71, New Fairfield
Rotatori, E. S., Georgetown ’58, Hartford
Rotenberg, D., Boston ’65, Hartford
Roth, F. E., N. Y. U. ’25, Hartford
Roth, M. S., N. Y. U. ’59, Hartford
Roth, O., Vienna ’37, New Haven
Roth, S., Lausanne ’59, New Haven
Roth, S. Z., Vienna ’36, New Haven
Rothblatt, R., Tufts ’32, Willimantic
Rothstein, D., L. I. College Hospital ’25, Southbury
Rothstein, I., N. Y. U. ’33, West Hartford
Rouman, J. C., Northwestern ’53, Hartford
Rourke, T. A., Columbia ’37, Greenwich
Rousseau, D. G., Vermont ’45, Taftville
Roussis, K., Un. Thessaloniki, Greece ’58, Hartford
Rowett, D., Penn ’71, Old Saybrook
Rozen, A. A., Yale ’37, Hamden
Rozycki, J. S., Academy of Med., Poland ’53, Waterbury
Ruangyuttikarn, W., Chiangmai ’69, Bridgeport
Rubenstein, J. R.. Univ. Texas at San Antonio ’71, Waterbury
Rubin, A., Geneva ’29, Hartford
Rubin, A. A., Utah ’48, New Haven
Rubin, L. R., Syracuse ’58, Danbury
Rubin, M. L., Harvard ’61, Manchester
Rubinow, M. B., Long Island ’42, Manchester
Rubinstein, H. M., Western Ontario ’70, Stamford
Ruby, M. H., Columbia ’21, Waterbury
Ruby, R. J., Baylor ’36, Waterbury
Rucker, L. G., Meharry ’49, Storrs (Windham County)
Ruderman, M. Hahnemann ’61, Hartford
Rudnicki, R. D., S.U.N.Y. Downstate ’68, West Hartford
Ruiz, R. R., Havana ’43, Danbury
Rusch, O. F., Un. Munich ’64, Bridgeport
Russell, B. I., St. Andrew’s Scotland ’58, Meriden
Russell, D. G., Tufts ’54, Bristol
Russel, G. G., Harvard ’19, West Hartford
Russell, T. H., Yale ’10, Hamden
Russell, W., St. Andrew’s Scotland ’57, Meriden
Russman, C., Tufts ’23, Hallandale, Florida (Middlesex County)
Russolillo, F. E., George Washington ’68, Hartford
Russo, R. D., Jr., Tulane ’73, Bridgeport
Russo, J. N., Vermont ’45, Hartford
Russo, J. R., Columbia ’43, Bridgeport
Russo, R. D., Georgetown ’43, Bridgeport
Ruszkowski, R. J., Med. Coll. Wisconsin ’68, Waterbury
Rutherford, J. W., Tufts ’53, New Canaan
Ryan, J. E., Albany ’48, Easton
Ryan, J. J., Columbia ’41, Stamford
Ryan, M. J., Jr., Kansas ’67, Hartford
Ryan, R. H., Univ. Vermont ’72, Sharon
Ryan, S. J., Columbia ’47, Middlebury
Ryan, V. G., Yale ’34, Portland
Ryan, W. A., McGill ’45, Stamford
Ryan, W. D., N. Y. Medical ’53, Wethersfield
Ryan, W. F., Jr., Tufts ’47, Hartford

Saccio, J. D., Yale ’59, New Haven
Sacco, J. J., Loyola ’55, Norwalk
Sach, F. L., Columbia ’63, New Haven
Sachs, J. J., N. Y. U. ’40, Hartford
Sacks, H. S., Cornell ’52, Westport
Sacks, K. L., Pittsburgh ’69, Fairfield
Sadowski, J. S., Georgetown ’55, Hartford
Safford, T., Jr., Long Island ’47, Ridgefield
Saidel, J. W., Chile ’38, Bridgeport
Saini, O. P., Med. Coll. Amritsar, India ’63, Manchester
St. James, A. T., Long Island ’44, Wallingford
St. John, L. A., Fordham ’20 Wethersfield
St. John, N. E., George Washington ’48, Wethersfield
Salerno, N. R., Jefferson ’64, Hartford
Salerno, S. A., Georgetown ’59, Greenwich
Salinger, R., Johns Hopkins ’25, New Haven
Sallick, R. M., Cornell ’62, Norwalk
Saltzman, M., Berne, Switzerland ’58, Plainville
Saltzman, S. H., State Univ. N. Y. ’51, Hartford
Salvio, D. G., Padova Univ. ’57, Bridgeport
Samai, H., Tehran Med. Sch. ’63, Norwalk
Samponaro, N., Johns Hopkins ’29, Torrington
Samson, D. P., Columbia ’43, Thomaston
Samson, D. W., New Jersey ’63, New Britain
Samuelson, A. W., Tufts ’48, Bridgeport
Sanchez, R., Caldas Univ. ’66, Danbury
Sandler, G., Tulane ’50, Willimantic
Sandler, M. J., Tulane ’55, Willimantic
Sandulli, G. R., Tufts ’29, Watertown (New Haven County)
Sangree, M. H., Jr., Cornell ’59, Waterbury
Sansing, J. G., Yale ’66, Torrington
Santagata, P. W., Georgetown ’55, Stamford
Santella, S. M., Creighton ’57, Bridgeport
Santiccioli, A. B., Bologna ’40, Norwich
Santilli, J. Jr., Georgetown ’68, Bridgeport
Santopietro, O. O., N. Y. Med. Coll. ’48, Waterbury
Santoro, G. M., Cornell ’24, Prospect
Saperstein, S., Chicago Med. ’60, Danbury
Saracco, F. P., Catholic Un. Belgium ’66, Hamden
Saracino, L., Bari ’44, Norwich
Saraczynski, D. L., Zurich ’56, Bridgeport
Sasaki, C. T., Yale ’66, New Haven

Satlof, D. M., Emory '61, Hartford
Saunders, F. P., Boston '58, Danbury
Saunders, G. R., Cornell '41, Old Saybrook
Saunders, W. L., Rochester '49, Elmwood
Sava, G. A., Ottawa '57, Stamford
Savak, J. E., Boston '45, Springdale
Savarese, E. C., Univ. Rome '71, Naugatuck
Savin, R. C., Florida '61, New Haven
Savin, S., Vermont '45, Bridgeport
Savitsky, E., N. Y. C. '41, Stamford
Sawicki, L. A., Boston '48, Wallingford
Sawyer, C. E., Tufts '51, Stafford Springs
Sawyer, J. D., Vermont '44, Norwich
Sax, R. E., Western Ontario '63, Bridgeport
Saxe, L. P., Kansas '46, New London
Saxon, R. J., Upstate N. Y. '69, Bloomfield
Sayers, D. O'C., Tufts '35, Waterbury
Sayers, J. H., Tufts '56, Hartford
Sayers, J. J., Tufts '35, Hartford
Sayers, R., Univ. Lourain '53, Madison
Scalice, R. A., N. Y. Med. Coll. '67, Torrington
Scalzi, L. C., Bologna '37, Bridgeport
Scarpa, F. J., Johns Hopkins '67, Derby
Scavetta, J. F., Loyola '67, New Canaan
Scavo, V. J., N. Y. U. '58, Bridgeport
Schachter, E. N., N. Y. U. '68, New Haven
Schapira, H. J., Univ. Geneva '62, New Haven
Schardt, W. M., N. Y. U. '45, Manchester
Schare, G. D., Med. Coll. Virginia '67, Bridgeport
Schatten, S. S., N. Y. U. '31, West Hartford
Schear, W. A., N. Y. Med. Coll. '54, Thompsonville
Schechtman, C. T., Vermont '26, New Britain
Scheer, C. W., Stanford '56, Meriden
Scheer, E. H., Tufts '45, New Britain
Scheig, R. L., Yale '56, Newington (New Haven County)
Scherr, E. S., Geneva '57, Branford
Scherr, E. H., Med. Coll. Va. '46, New Haven
Schipke, R. E., N. Y. Med. Coll. '46, West Hartford
Schioppo, D. B., Seton Hall '63, New Haven
Schlein, A. P., Jefferson '65, Bridgeport
Schlessel, T. E., Rochester '55, Hamden
Schloss, W. A., N. Y. U. '40 Bloomfield
Schmidt, C. W., Buenos Aires Un. '57, New London
Schmidt, J. L. West Virginia '64, Mystic
Schmiedeck, A. A., Vienna '49, Weston
Schmitt, D., Physicians & Surgeons '54, Old Greenwich
Schmoll, R. D., Pennsylvania '57, Bloomfield
Schnap, I., Long Island '29, Hartford
Schneidau, P. B., N. Y. U. '58, Stamford
Schneider, R. G., N. Y. U. '56, Westport
Schneider, W., George Washington '30, Rockville
Schoenwald, H. R., Georgetown '58, Darien
Scholan, F. J., Tufts '55, Southport
Scholand, J. F., Harvard '66, New Britain
Scholhamer, C. F., Yale '42, Hamden
Scholhamer, C. F., Jr., Yale '72, New Haven
Scholz, H. D. Breslaw '51, New London
Schowalter, J. E., Wisconsin '60, New Haven
Schreiber, S. J., Chicago '58, New Haven
Schreuder, O. B., Oregon '24, Marlborough
Schrier, R. I., Chicago '52, New Haven
Schubert, A. S., Georgetown '64, Avon
Schulman, P. L., St. Univ. New York '58, Norwalk
Schultz, M., N. Y. U. '43, Westport
Schupack, S. D., Tufts '24, New Britain
Schurgast, A. W., Cincinnati '45, Meriden
Schuster, C. L., N.Y.U. '64, New Canaan
Schuster, H. S., N. Y. U. '64, West Hartford
Schwartz, A. H., N. Y. U. '58, New Haven
Schwartz, A. J., Columbia '59, Stamford
Schwartz, G. L., Cincinnati '67, Rockville
Schwartz, H., Colorado '43, Chicago, Illinois (Hartford County)
Schwartz, H. N., Med. Coll. Virginia '37, Hartford
Schwartz, K. V., Cornell '71, Derby
Schwartz, L., Tufts '57, Hartford
Schwartz, M. D , Yale '59, New Haven
Schwartz, M. M. L., N.Y. Med. Coll. '68, New Haven
Schwartz, P. E., Tufts '31, Middletown
Schwartz, P. E., S. U. N. Y. '60, Norwalk
Schwartz, R. D., State Univ. Brooklyn '52, Danbury
Schwartz, S. S., Tufts '46, New Haven
Schwarz, H. P., Vienna '38, Norwich
Schweizer, R. T., Tufts '64, Hartford
Schwimmer, R. R., Temple '49, Greenwich
Scialla, A. V., New Jersey '66, New Haven
Sciarrillo, J. J., Stritch School of Medicine '50, Bridgeport
Scoville, W. B., Pennsylvania '32, Hartford
Scudder, W. T., Physicians & Surgeons '55, Simsbury
Sculco, M. J., Boston '60, Norwich
Scull, E., Jefferson '48, Hartford
Scully, H. F., N. Y. Med. Coll. '56, West Hartford
Scully, R. T., Georgetown '35, New Britain
Seamonds, P., Univ. of Sydney, Australia '63, Greenwich
Sears, L., Harvard '29, Norwich
Segall, E. M., Howard '58, Waterbury
Segel, S., Vermont '35, Norwich
Seguljic, N. J., Georgetown '55, Bristol
Seibert, A. F., Yale '27, Berlin
Seide, M. J., Chicago '53, Hartford
Seigle, S. P., Harvard '40, Hartford
Sekerak, R. J., Maryland '34, Bridgeport
Selcow, J. E., Vermont '59, Hartford
Seleman, A. W., Georgetown '55, Torrington
Seliger, G., St. Univ. N.Y. '62, Waterbury
Seligson, D., Utah '46, New Haven
Sella, E. J., Stritch, Loyola '66, New Haven
Sellner, H. A., Columbia '67, Danbury
Selsky, L. M., Johns Hopkins '65, Bristol
Selzer, R. A., Albany '53, New Haven
Senathirajah, K. N., Univ. Ceylon '69, Bridgeport
Seneviratne, U. E., Univ. Ceylon '67, Hartford
Senn, M. J. E., Wisconsin '27, New Haven
Sennett, E. J., Vermont '43, Hartford
Serbin, A. F., Rush '33, Hartford
Sereda, L. E., Toronto '53, Bloomfield
Serena, F. A., Hahnemann '40, Norwalk
Serena, J. M., Hahnemann '41, Norwalk
Sereny, P., Albert Einstein '72, West Hartford
Serrell, H. P., Cornell '32, Greenwich
Shafer, M. E., Pennsylvania '50, Hartford
Shafto, W. A., Edinburgh '60, Danbury
Shah, S. M., Seth G. S. Med. Coll. '67, Norwalk
Shah, S. M., T. N. M. Coll., India '63, Hartford
Shah, U. C., Grant Med. Coll. '50, Bridgeport
Shakibai, A., Tehran Un. '65, Manchester
Shanahan, S. A., Med. Coll. Pennsylvania '69, Greenwich
Shanley, W. T., N. Y. Med. Coll. '61, Bridgeport
Shapiro, B. S., Buffalo '57, Ansonia
Shapiro, D. L., S.U.N.Y. '68. New Haven
Shapiro, D. W., N.Y.U., '71, New Haven
Shapiro, H. I., Chicago '63, Westport
Shapiro, H. O., Alabama '63. Vernon
Shapiro, H. R., S.U.N.Y. '69, Hartford
Shapiro, J. R., Cincinnati '74, Westport
Shapiro, M. M., St. U. N Y. '67, Waterbury
Shapiro, R., Pennsylvania '39, New Haven
Shapiro, R. L., N.Y. Med. Coll. '61, Hartford

Sharian, K. E., Teheran Un. '57, Waterbury
Sharon, H. J., Berne '58, New Britain
Sharon, M. R., Seton Hall '62, Rockville
Shaw, L. E., Wom. Med. Coll. Pa. '22, New Preston (Fairfield County)
Shaw, R. C., Chicago '47, Hartford
Shaywitz. S. E., Albert Einstein '66, Westport
Shea, J. P., N. Y. U. '46, Bridgeport
Shea, M. S., Vermont '21, New Haven
Shea, V. T., Tufts '31, Waterbury
Shea, V. T., Jr., Nat'l. Un. Ireland '65, Waterbury
Shea, W. P. III, Royal College, P & S, Ireland '71, Hartford
Shealy, A. C., Boston '58, Waterbury
Sheard, C., Toronto '39, Stamford
Shearer, J. K., Albany '43, Waterbury
Sheehan, B. F., Indiana '66, Old Saybrook
Sheehan, F. G., Queen's Univ Belfast '55, Middletown
Sheehan, G. D., Un. Coll. Dublin '65, Hartford
Sheehan, J. E., Long Island '47, Ridgefield
Sheftell, F. D., N. Y. Med Coll. '66, Stamford
Sheiman, R. A., Michigan '64, Bridgeport
Sheiman, S. C., Michigan '40, Bridgeport
Shelling, R. L., Boston '56, Milford
Shelton, P A., N. Y. Univ. '57, West Hartford
Shenker, B. M., N. Y. Med. Coll. '38, Middletown
Shepard, W. M., Columbia '29, Putnam
Sheppard, E. C., New Jersey Coll. Med. '67, Westport
Sherlip, B. J., N. Y. Med. Coll. '55, Trumbull
Sherman, B., George Washington '29, N. Indialantic, Florida (Middlesex County)
Sherman, I. J., Johns Hopkins '40, Bridgeport
Sherman, J. A., Chicago '67, Waterbury
Sherman, R. B., Yale '58, Winsted
Sherman, S. H., Columbia '34, Stamford
Sherman, S. H., Cornell '32, Simsbury
Sherman, W. T., N. Y. U. '60, Danbury
Sherpick, W. E., Columbia '48, Farmington
Sherrington, H. J., Nat'l. Un. Mexico '63, Stamford
Sherwin, C. P, Jr., Columbia '43, New Britain (New Haven County)
Sherwood, H., N. Y. Med. Coll. '37, Middletown
Sherwood, P. M., Boston '42, Hartford
Shiffman, I., St. Univ. New York '59, Meriden
Shiller, J. G., Columbia '52, Westport
Shimelman, M. M., McGill '67, New Haven
Shimkin, P. M., Pennsylvania '65, Bridgeport
Sholler, N. A., Hahnemann '43, Bridgeport
Shoukimas, J., Harvard '42, Hartford
Shoup, H. B., Jr., Indiana '35, Westport
Shull, J. C., Harvard '36, Hartford
Shure, A. L., Tufts '27, Hamden
Shutkin, N. M., Northwestern '37, New Haven
Shutkin, P. M., Cornell '60, New Canaan
Sica, V. F., Lourain '57. Bridgeport
Sicklick, E., Geneva '51, Hartford
Siderides, C. I., Athens '52, Stamford
Siderides, L. E., Athens '52, Stamford
Siefert, F. E., N. Y. Med. '60, Old Greenwich
Siegel, B. S., Cornell '57, New Haven
Siggins, L. D., Univ. Melbourne, Australia '59, New Haven
Sigman, R. L., Harvard '66, Hartford
Sikand, R. S., King Edward, Punjab '46, New Haven
Sikand, S. D., Punjab '49, Willimantic
Siker, E., Women's Med. Pa. '43, Hartford
Sikorski, J. J., Basel '57, Derby
Silberberg, W. P., Duke '70, Ansonia
Silberman, C. G., Jefferson '50, Westport
Silberstein, A. B., Downstate Med. Coll. '62, Middletown
Silberstein, M. H., Berne '55, New Haven
Silk, M. R., N.Y.M.S. '62, Hartford
Silliman, W. B., Jefferson '46, Windsor
Sillman, E., Columbia '48, Meriden
Silva, H. R., San-Marcos Un. '62, New Haven
Silver, H., Buffalo '57, Hartford
Silver, S. E., Columbia '62, New London
Silverbach. S., Albany '70, Enfield (Tolland County)
Silverberg, S. J., Columbia '21, New Haven
Silverman, D. R., St. Louis '63, Bridgeport
Silverman, S. M., St. Univ. Ghent, Belgium '72, Farmington
Silverman, J. P., N. Y. U. '65, New Haven
Silverman, N. R., N. Y. U. '64, Hamden
Silverstein, D. M., Wayne State '59, Derby
Silverstein, H. R., Ohio State '65, Hartford
Silvert, D. S., Manitoba '52, Danbury
Simkovitz, J., Havana '53, Bridgeport
Simon, H. J., Colorado '43, Waco, Texas (Fairfield County)
Simon, L. G., N. Y. U. '27, Norwalk
Simonds, J. R., Vermont '38, Washington Depot
Simonelli, J. M., Bologna '58, Danbury
Simpson, J. A., Georgetown '60, Bridgeport
Simses, J. P., Tufts '37, Bridgeport
Simses, J. P., Jr., Tufts '69, Bridgeport
Singer, B., N. Y. Med. Coll. '61, Norwalk
Singer, J. B., Yale '66, Norwalk
Sinnamon, R. C., Penn. '68, Durham
Sinton, W. A., Boston '46, Danbury
Sires, W. O., Maryland '50, Fairfield
Sirica, A. E., Johns Hopkins '26, Waterbury
Sirkin, R. B., Harvard '55, New Britain
Sirop, P. A., Brussels '58, Waterbury
Sirot, G., State Univ. of N. Y. '51, New Haven
Sirota, H. H., Cambridge '37, East Hartford
Sittambalam, E. J., Ceylon '69, New Britain
Sklaire, M. W., N. Y. U. '60, Madison
Sklaver, J., Michigan '37, Waterbury
Skluth, L. H., N. Y. U. '36, Norwalk
Skolnick, S. R., Univ. Heidelberg '69, Darien
Skreczko, C. K., Jefferson '37, New Haven
Slater, D., N. Y. Med. Coll. '40, Hamden
Slater, G., Vienna '38, Stamford
Slater, G. S., N. Y. Med. Coll. '44, New Britain
Slater, J. A., N. Y. Med. Coll. '71, New Canaan
Slater, M., Yale '24, Hamden
Slavin, J. D., Jr., Yale '66, Hartford
Slepian, J. Z., Bologna '68, Derby
Slossberg, D. S., Tufts '34, Bloomfield
Slover, W. P., Jr., Boston '60, Hartford
Slysz, L. B., Boston '27, New Britain
Small, A. R., N. Y. Med. Coll. '48, Bridgeport
Small, J. H., New York '54, Bridgeport
Smeraldi, R. A., Ottawa '59, Stamford
Smiley, S. S., St. Un. New York '59, Ansonia
Smith, D. B., Yale '58, Wallingford
Smith, D. H., Syracuse '53, Manchester
Smith, E. R., Yale '40, Meriden
Smith, F. E., Jr., Columbia '34, Salisbury
Smith, F. F., Howard '30, New Haven
Smith, G. W., Pittsburgh '69, Cheshire
Smith, H. W., Yale '53, New Haven
Smith, J. A., Western Reserve '35, Waterbury
Smith, J. D., Lausanne '62, West Hartford
Smith, J. J., Maryland '30, Easton
Smith, J. R. V., Pittsburgh '60, Hartford
Smith, J. T., Long Island '41, Torrington
Smith, L. A., Albany '43, West Hartford
Smith, L. K., Univ. of Rochester '44, Hartford
Smith, L. M., Tufts '37, Stamford

Smith, N. E., Jr., Med. Coll. Virginia '66, Winsted
Smith, R. D., McGill '54, Torrington
Smith, R. P., Harvard '43A, Branford
Smith, S. G., Rochester '62, Manchester
Smith, W. F. Cornell '34, West Hartford
Smith, W. L., Columbia '37, Hartford
Smolen, E. M., N. Y. U. '44, Fairfield
Smolen, R. L., N.Y.U. '50, Fairfield
Snoke, A. W., Stamford '33, Hamden
Snow, B., Tufts '57, New Haven
Snurkowski, C. V., Georgetown '25, New Haven
Snyder, E W., P & S '58, Deep River
Snyder, H. L., Chicago '54, Manchester
Snyder, R. E., Indiana '72, Norwich
Soares, M. J., N. Y. Med. Coll. '57, Hartford
Sobin, B. A., S.U.N.Y. '70, Manchester
Sokhos, D. R., Nat'l. Un. Athens '48, North Haven
Sokolski, E. J., Maryland '45, Danbury
Solano, H., Nat'l. Un. Mexico '66, New Britain
Soletsky, H. B., N. Y. U. '62, Brookfield
Solitare, G. B., Yale '57, North Haven
Sollosy, A., Tufts '27, Pompano Beach, Florida
Solomon, M., Michigan '56, Norwich
Solomon, R. Z., Yale '39, Hartford
Solway, R. I., Toronto '40, Westport
Somogyi, B. B., S.U.N.Y. '65, Southington
Son, Y. H., Seoul Nat'l. Un. '50, New Haven
Son, Y. S., Seoul Women's '47, West Hartford
Song, S., Korea '62, Manchester
Songco, M. F., Philippines '54, Norwich
Sonnen, V. G., Basel '46, Enfield (Tolland County)
Soreff, L., Tufts '32, East Hampton
Sorge, D. V., St. Louis '59, Bridgeport
Soriano, E. R., Philippines '52, Groton
Sornberger, C. F., Syracuse '40, Hampton
Sosa, J. B., Santo Domingo '59, Middletown
Southwick, W. O., Nebraska '47, New Haven
Souvlis, C. D., Nat'l. Athens '47, Bridgeport
Spalding, P. E., London Univ. '53, Portland
Spannaus, F. C., Jr., N. Y. U. '45, Roxbury (Fairfield County)
Spector, N., Tufts '24, Willimantic
Speer, C. S., Hahnemann '55, Hartford
Speight, H. E., Georgetown '27, Middletown
Spekter, L., Rochester '33, Hartford
Spencer, J. A. E., Yale '62, Greenwich
Spencer, L. O., Tulane '26, Myrtle Beach, South Carolina (New Haven County)
Spencer, R. P., So. California '54, Farmington
Spencer, S., Georgetown '39, Fairfield
Speth, C. P., Heidelberg '68, Danbury
Spignesi, J. T., Georgetown '30, Wallingford
Spillane, R. J., Washington '43, Hartford
Spinelli, N. P. R., Yale '44, Devon (Fairfield County)
Spinner, S., Tufts '35, New Haven
Spiro, H. M., Harvard '47, New Haven
Spitz, H., Yale '43, New London
Sponzo, J. J., Tufts '38, Hartford
Sprafke, D. F., Georgetown '63, New London
Sprecace, G. A., State Univ. New York '57, New London
Springer, G. L., Yale '68, Norwich
Springer, T. D., Indiana '69, Hartford
Sproul, L. E., Harvard '58, Mystic
Squattrito, U., Palmero '52, Darien
Squillacote, V. J., Rome '34, New Britain
Sreenivas, V. I., Govt. Med. Coll. Mysore '61, Orange
Srinivas, R. R., Prince of Wales '63, Waterford
Srinivasan, J. P., Christian Med. Coll., India '64, Bloomfield
Stabinsky, C., New York '55, Norwalk
Stack, W. J., N. Y. Med. Coll. '48, Hartford
Staffieri, S., Naples '44, Danbury
Stallworth, V. M., Meharry '59, Bridgeport
Stanberry, M. C., Univ Arizona '64, Lyme
Standard, J. E., Syracuse '43, Waterbury
Standish, E. M., Harvard '22, West Hartford
Standish, H. C., Cornell '28, West Hartford
Standish, W. A., Yale '25, Avon
Stanford, J., Harvard '51, Essex
Stankard, W. F., Jefferson '38, Stamford
Stanton, R. A., Physicians & Surgeons '72, New Haven
Stanton, R. E., Boston '55, Manchester
Stapor, J. J., Long Island '47, Orange (Hartford County)
Starr, R. M., Yale '26, Quaker Hill
Stathacos, E. J., North Carolina '57, Fairfield
Stavola, J. J., New York '56, Hartford
Stearns, C. S., Yale '46, East Hartford
Steckler, J. B., St. Un. New York '66, New Britain
Steege, T. W., Yale '38, Hartford
Steglich, C. P., Univ. Columbia '48, Stamford
Stein, M. L., N. Y. Univ. Coll Med. '59, Milford
Stein, S. A., Harvard '67, New Haven
Stein, S. C., Un. Virginia '56, New London
Steinberg, D. H., St. Univ. New York '59, Stamford
Steinberg, H., N. Y. Med. '54, Westport
Steinberg, M. G., N. Y. U. '68, Stamford
Steinberger, L., Royal Hungarian Eliz. '37, Norwalk
Steincrohn, P. J., Maryland '23, Coral Gables, Florida (Hartford County)
Steller, R. E., Temple '53, Stamford
Stember, R. H., N.Y.U. '59, Norwalk
Stent, P. A., Georgetown '54, Hartford
Stephenson, J. H., Cornell '51, Greenwich
Steremberg, Z, San Marcos Un. '63, Bridgeport
Sterling, A. P., S.U.N.Y. '67, Waterbury
Stern, H., Tufts '52, New Haven
Stern, P. G., Med. Coll. Virginia '69, Hartford
Stern, R., Western Reserve Univ. '66, New Haven
Stern, S., St. Univ. of New York '57, New Haven
Sterrett, R. A., Cornell '39, Southport
Stetson, H. P., Boston '41, Southington
Stetson, H. W., Vermont '06, Milford
Stettbacher, H. J., Harvard '22, Cambridge, Maryland (New Haven County)
Stevens, J. G., Maryland '41, Bridgeport
Stevens, T. J., S.U.N.Y. '67, Hartford
Stewart, L. Q., Yale '33, South Yarmouth, Mass. (Hartford County)
Stewart, W. E. L., Albany '52, New Britain
Stier, S., Temple '70, New Britain
Stier, S. D., N. Y. Med. '61, Derby
Stietzel, E. E., Columbia '34, Norwalk
Stiff, D. P., Michigan '56, Bridgeport
Stilson, C., Yale '42, New Haven
Stitleman, M., Albert Einstein '66, Branford
Stoane, L., Downstate Med. Ctr. '60, Middletown
Stocking, A. G., Long Island '46, Waterbury
Stockwell, R. M., Tufts '56, Farmington
Stone, E. L., Albert Einstein '70, New Haven
Storms, W. F., Harvard '30, Wethersfield
Stotts, H. L., Un. Washington '52, Bridgeport
Stoughton, P. V., McGill '53, Hartford
Stovell, P. B., Columbia '68, Norwalk
Strauch, G. O., Michigan '57, Stamford
Strayer, L. M., Jr., Harvard '30, Lancaster, New Hampshire (Fairfield County)
Strazek, L. M., Wroclaw '60, Wallingford

Street, J. M., Duke '42, New Milford
Streeto, J. M., Pennsylvania '60, Hartford
Strothers, G., Middlesex Hosp. England '64, New Haven
Stroup, R. F., Rochester '65, New Haven
Stubblefield, R. L., Uni. of Texas '42, New Canaan
Stubenhaus, J. H., N. Y. Med. Coll. '47, Fairfield
Stuermer, V. M., Nebraska '48, New Haven
Sturman, R. H., Yale '50, Waterbury
Suerig, K. C., New York-Bellevue '61, Cos Cob
Suesserman, H. I., George Washington Univ. '64, New Haven
Sulick, E. J., Georgetown '54, Manchester
Sullivan, A. F., Jefferson '42, Waterbury
Sullivan, B. E., Georgetown '57, Bridgeport
Sullivan, C. N., McGill '30, New Britain
Sullivan, J. J., Jr., Tufts '55, Stamford
Sullivan, J. L., Yale '51, Bridgeport
Sullivan, P. R. C., Tufts '66, Hartford
Sullivan, R. E., Georgetown '63, Waterbury
Sullivan, R. M., Tufts '59, East Hartford
Sullivan, T. J., Yale '17, Boca Raton, Florida (New Haven County)
Sullivan, W. M., New York '54, Norwalk
Sulman, M., Columbia '36, New London
Sultar, R. S., State Univ. N. Y. '57, Kensington
Sulzycki, M. M., Georgetown '43, Bridgeport
Summa, J. F., New York Med. Coll. '58, Waterbury
Sumner, M. L., N. Y. Med. Coll. '47, New Haven
Sumner, P. E., Tufts '55, Manchester
Sunderman, C. R., Florida '65, Farmington
Sunderman, F. W., Jr., Jefferson '55, Farmington
Sundquist, A. B., Tufts '33, Manchester
Sunkin, D. F., N. Y. U. '42, Hartford
Suplicki, J. W., Tufts '26, Norwich
Sussler, D., Fordham '16, Springfield Mass. (New London County)
Sutphen, J. H., Ohio State '65, New London
Suttenfield, V., Georgia '44, Stamford
Sutton, P., Vienna '36, Groton
Svedlow, B. D., George Washington '41, Stamford
Swain, E. B., Cornell '51, Hartford
Swan, B. R., Cornell '43, New Haven
Swarts, W. B., Pennsylvania '34, Greenwich
Swartz, G. J., Ottawa '65, New Britain
Sweet, A. N., Maryland '18, Middletown
Sweet, E. B., Virginia '50, Hartford
Sweet, R. T., State Univ. N. Y. '52, Middletown
Swett, N. P., N. Y. U. '46, Hartford
Swift, D. B., Harvard '62, Lakeville
Swift, W. E., Columbia '40, New Haven
Syz, H., Geneva '21, Westport

Tadeo-Goldman, J. A., Santo Tomas '53, West Hartford
Taffel, M., Yale '31, Woodbridge
Tager, M. G., N. Y. Med. Coll. '58, Norwalk
Takata, H., Kobe Med. '65, Hartford
Talbot, H. P., Maryland '27, Venice, Florida (Hartford County)
Tandon, K. N., Maulana Azad '66, East Hartford
Tan, D. L., Univ. of Groningen '57, Meriden (New London County)
Tan, J. M., Santo Tomas '67. Fairfield
Taube, S. L., Pittsburgh '67, Waterbury
Taubin, H. L., Un. Virginia '65, Bridgeport
Taylor, D. M., N. Y. U. '47, New Britain
Taylor, K. S., Arkansas '61, Norwich
Taylor, M. J., Columbia '63, Southbury
Taylor, P. T., Temple '62, Hartford
Taylor, R. F., Ohio '58, Glastonbury
Taylor, R. M., George Washington '22, East Haven
Taylor, R. N., Yale '30, New London
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TRUMBULL 06611

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WESTPORT 06880

Morgan, Mrs. William O., 269 Main

Hartford County

AVON 06001

Goldenthal, Mrs. Carol, 17 Wright Dr.
Hamilton, Mrs. T. Stewart, 50 Bayberry Hill Rd.
Harrop, Mrs. James, 52 Hitchcock Lane
Janzen, Mrs. Arnold H., 64 Bayberry Hill Rd.
Larson, Mrs. Albert L., 104 Rever Knolls
Massey, Mrs. Robert U., 10 Lord Davis Lane
Nathanson, Mrs. Robert, 27Hurdle Fence Dr.
Woodford, Mrs. Chester N., Deercliff Rd.

BLOOMFIELD 06002

Bagnall, Mrs. Richard S., 616 Bloomfield Ave.
Beckett, Mrs. Ronald S., 45 Sharon Rd.
Bernstein, Mrs. Louis, 3 East Lane
Bridberg, Mrs. Richard M., 4 Penwood Rd.
Britting, Mrs. John A., Jr., 29 Crestview Dr.
Deutsch, Mrs. Joel, 41 Burnwood Dr.
Feneton, Mrs. Ernest, 13 Maple Edge Dr.
Fortin, Mrs. Victor, Jr., 14 Longview Dr.
Gossling, Mrs. Harry R., 558 Simsbury Rd.
Hardy, Mrs. James, 85 Duncaster Rd.
Hirshberg, Mrs. Manuel S., 23 Oak Lane
Johnson, Mrs. James C., Jr., 40 High Hill Rd.
Knight, Mrs. Harold F., 5 Pent Rd.
Levine, Mrs. Marvin, 19 Old Village Rd.
McCrann, Mrs. Donald J., 717 Bloomfield Ave.
Miller, Mrs. Harry B., 4A East Lane
Newell, Mrs. Richard C., 14 Penwood Rd.
Rosenkranz, Mrs. Barry, 18 Florence Rd.
Rosenthal, Mrs. Moe, 2 East Lane
Saxon, Mrs. Ronald, 17g Woodlawn Ave.
Schnap, Mrs. Isidore, 5 Crestview Dr.
Serbin, Mrs. Frederick A., 365 Simsbury Rd.
Simmons, Mrs. William H., 36 Brentwood Dr.
Ungar, Mrs. Joseph, 8 Briar Lane
Wetstone, Mrs. Howard J., 77 Kenwood Circle

BOLTON 06040

Wickersham, Mrs. Wendell, III, Dimock La.

BURLINGTON 06085

Collins, Mrs. Conrad, 16 Jennifer La.

COLLINSVILLE 06022

Diters, Mrs. Edward N., 16 Gildersleeve Ave.
Kingston, Mrs. Paul J., Barbourtown Rd., R.F.D. 1
Phelps, Mrs. Paul S., R.F.D. 1

COVENTRY 06238

Coelho, Mrs. Julio N. South St., R.R. #2

EAST HARTFORD

Acqua, Mrs. Louis C., 71 Holland Lane 06118
Golino, Mrs. Emanuel F., 111 Holland La. 06118
Trantolo, Mrs. Arthur, 64 Holland Lane 06118

ELLINGTON 06029

Cameron, Mrs. Ian, 44 Abbott Rd.

ENFIELD 06030

Johnson, Mrs. Carl W., 1033 Enfield

FARMINGTON 06032

Belkin, Mrs. Joseph, 58 Dorset La.
Browne, Mrs. Harry H., 26 Dorset La.
Butterfield, Mrs. William C., 42 Northwoods Rd.
Carignan, Mrs. Roland, 26 Lake Shore Dr., Apt. B1
Cooke, Mrs. Ronald W.. Old Mt. Rd. 06032
Dunn, Mrs. Morris L, 729 Farmington Ave.
Klatsky, Mrs. Alan Usher, 8 Candlewood La.
Roberts, Mrs. Melville, 10 Mt. Spring Rd.
Schuster, Mrs. Harvey S., 3F Earls Ct., Talcott Village
Smith, Mrs. Jay R. V., 6 Parish Rd.

GLASTONBURY 06033

Donovan, Mrs. James F., 211 Farmcliff Drive
Drury, Mrs. Robert, 83 Elm Tree Rd.
Golub, Mrs. Grant, 45 Brookhaven Dr.
Griswold, Mrs. Edwin M., 2869 Main
Hamlin, Mrs. Charles H., 2079 Main
Leicach, Mrs. Mario, Millstone Rd. R.F.D. 3
Moloney, Mrs. David R., 415 Strickland
O'Connell, Mrs. Paul, 146 Woodhaven Rd.
Palma, Mrs. Joseph, 435 Woodhaven Rd.
Robinson, Mrs. John, 84 S. Hollister
Rossbaum, Mrs. Robert, 289 Three Mile Rd.

HARTFORD

Beizer, Mrs. Edmund, 31 Woodland, Apt. 75 06105
Bellizzi, Mrs. Joseph, 114 North Beacon 06105
Brandon, Mrs. Kenneth F., 128 North Oxford 06105
Carangelo, Mrs. John, 234 North Beacon 06105
Cobb, Mrs. Richard J., 50 Canterbury 06112
Cramer, Mrs. Sidney L., 75 Westerly Ter. 06105
Delligan, Mrs. Frances L., 31 Woodland 06105
DePasquale, Mrs. Francis L., 1990 Broad 06114
Dion, Mrs. Julien A., 152 Fairfield Ave. 06114
Geetter, Mrs. Isidore S., 92 Fern 06105
Hulme, Mrs. Stephen, 7 Soby Dr. 06107
Kosar, Mrs. Walter P., 39 Woodside Circle 06105
Lankin, Mrs. Joseph J., 71 Scarborough 06105
McNulty, Mrs. T. F., 22 North Beacon 06105
Pizzo, Mrs. Paul S., 660 Wethersfield Ave. 06114
Powers, Mrs. Edward, 104 Terry Rd. 06105
Solomkin, Mrs. Mark, 107 Westerly Ter. 06105
Tonken, Mrs. Louis C., 50 Harwich 06114
Uricchio, Mrs. Joseph G., 380 Linnmoore 06105
Worthen, Mrs. Thatcher W., 183 Bloomfield Ave. 06105

KENSINGTON 06037

Clapp, Mrs. Paul, 239 Butternut La.
Filewicz, Mrs. Stanley P., 267 Brook Meadow Rd.
Waskowitz, Mrs. David, 30 Blue Ridge La.

MANCHESTER 06040

Barrett, Mrs. Harold S., 120 Lakewood Circle
Charendoff, Mrs. Leo, 135 Steephollow Lane
Danyliw, Mrs. Joseph M., 43 Forest
Diskan, Mrs. A. Elmer, Box 371, R.D. 3
Donovan, Mrs. Thomas J., 100 Westland, R.D. 3, Box 285
Grossman, Mrs. Donald
Jacobson, Mrs. Charles E., Jr., 45 Wyllys
Karns, Mrs. Robert E., 61 Plymouth La.
Kim, Mrs. Cyril K., 62 Wynding Hill Rd.
Lehmus, Mrs. Harold J., 161 Blue Ridge Dr.
Malone, Mrs. H. John, 84 Prospect
Pastel, Mrs. Harvey, 646 Porter
Rinaldi, Mrs. Michael J., 181 Middle Tpke. E.
Rubinow, Mrs. Merrill, 68 Butternut Rd.
Snyder, Mrs. Herbert L., 47 Highwood Dr.
Sundquist, Mrs. Alfred B., Box 374, R.D. 3
Tehrani, Mrs. Hossein, 35 Shallow Brook La.

MARLBOROUGH 06424

Schreuder, Mrs. Otis B., South Rd.

MILLDALE 06467

Dudac, Mrs. Thomas, 120 Clark

NEW BRITAIN 06052

Bernstein, Mrs. Abraham, 93 Adams
Clarke, Mrs. Harold M., 746 Corbin Ave.
Formica, Mrs. Joseph J., 400 Shuttle Meadow Ave.
Peck, Mrs. Bernard C., 32 Park Pl.
Schectman, Mrs. Charles, 62 Dover Rd.
Wesoly, Mrs. Andrew S., 27 Grove Hill

NEW HARTFORD 06057

Thenebe, Mrs. Carl, R.F.D. Town Hill Rd.

NEWINGTON 06111

Callahan, Mrs. James L., 512 Main
Clark, Mrs. Isaiah, 162 Winslow Dr.
Friedberg, Mrs. I. H., 154 Cedarwood Lane
Levreault, Mrs. Gerald V., 22 Elton Dr.
O'Neil, Mrs. Vincent D., 72 Southwood Rd.

PLAINVILLE 06062

Iannotti, Mrs. John P., "Sharpenhoe," Red Stone Hill
Yannios, Mrs. James N., Red Stone Hill

ROCKVILLE 06066

O'Connor, Mrs. Luke E., 24 Ellington Ave.

ROCKY HILLL 06067

Roland, Mrs. Menelick, Veteran's Home

SIMSBURY 06070

Bartlett, Mrs. Raymond C., 6 Pinecrest Dr.
Carpentieri, Mrs. Joseph, 17 Hophollow
Gainter, Mrs. John R., 4 Westridge Dr.
Himmelsbach, Mrs. Richard, 47 Squadronline Rd.
Steinhacker, Mrs. Robert, 19 Sanctuary Dr.

SOUTHINGTON 06489

Blumer, Mrs. Arthur, Castleman Dr.
Gutierrez, Mrs. Teofilo, 28 McKenzie Dr.
Thalberg, Mrs. R. E., 80 Oakland Rd.

SOUTH WINDSOR 06074

Gutkowski, Mrs. Thaddeus J., 176 Oak
Zariphes, Mrs. Constantine, 1953 Main

UNIONVILLE 06085

Austin, Mrs. G. Lawrence, 23 Sycamore La.

VERNON 06086

Fogg, Mrs. Lyman B., 31 Irene Dr.
Roberts, Mrs. Douglas J., Jr., 802 Bolton Rd.
Zyla, Mrs. Edward, 189 Mt. Spring Rd. R.R. #4 06066

WEST HARTFORD

Alden, Mrs. John O., 15 Peaslee Hill 06107
Alderman, Mrs. M. Y., 16 Lakeview Dr. 06117
Alisberg, Mrs. Norman, 10 Deepwood La. 06107
Allen, Mrs. John C., 89 Waterside La. 06107
Allen, Mrs. Roy, 209 Sedgwick Rd. 06107
Amato, Mrs. Peter R., 8 Timrod Lane 06107
Anderson, Mrs. Albin S., 17 Drury Lane 06117
Anderson, Mrs. Gustave W., 30 Clark Dr. 06117
Andrews, Mrs. Ezra, 21 West Normandy Dr. 06107
Antupit, Mrs. Louis, 9 Crossways 06117

Baltrucki, Mrs. Henry C., 10 Berwyn Lane 06107
Barbour, Mrs. Charles M., 7 Wingate Lane 06107
Barker, Mrs. Norman J., 5 Forest Hills La. 06117
Basu, Mrs. Subrata K., 2669 Albany Ave. 06117
Bendett, Mrs. Rodman, 109 Highwood Rd. 06117
Berlin, Mrs. Bert B., 55 Uplands Dr. 06107
Blanchard, Mrs. Bradford, 40 Mt. Terrace Rd. 06107
Book, Mrs. Donald T., 334 Ridgewood Rd. 06107
Boren, Mrs. Charles, 21 Mountain View Dr. 06117
Bowen, Mrs. Francis, 46 Sedgewick Rd. 06107
Bowers, Mrs. George N., Jr., 136 Whiting Lane 06119
Bradley, Mrs. Donald F., Jr., 59 West Hill Dr. 06119
Brewster, Mrs. William B., Jr., 20 Northfield Rd. 06107
Bronson, Mrs. William R., 49 Smallwood Rd. 06107
Brown, Mrs. Donald, 30 Claybar Dr. 06117
Brown, Mrs. Louis, 136 Mohawk Dr. 06117
Brown, Mrs. Richard B., 49 Belcrest Rd. 06107
Bruno, Mrs. Francis, 1125 Trout Brook Dr. 06719
Buckman, Mrs. Charles A., 15 Claybar Dr. 06117
Bunce, Mrs. James W., 26 Ridgewood Dr. 06107
Burns, Mrs. John E., 10 Paxton Rd. 06107
Bush, Mrs. Hubert. 56 Brightwood La. 06110

Campbell, Mrs. Robert H., 28 Ranger La. 06107
Chester, Mrs. Lewis L., Beech Tree Lane 06107
Cohn, Mrs. Samuel H., 15 Brainard Rd. 06117
Coley, Mrs. Geoffrey M., 253 Ridgewood Rd. 06107
Conant, Mrs. Roger, 11 Sunrise Hill Dr. 06107
Conroy, Mrs. John T., 46 Sunrise Hill Dr. 06107
Conway, Mrs. Edward J., 24 Mountain Terrace Rd. 06107
Conway, Mrs. Mark, 28 Juniper La. 06117
Crombie, Mrs. H. David, 126 Hunter Dr. 06107
Cunin, Mrs. Burton, 10 Berwyn Rd. 06107
Curis, Mrs. Francis T., 24 Mohawk, Dr. 06117
Curran, Mrs. Timothy L., 14 Braintree Dr. 06117

Dalton, Mrs. George R., 339 South Main 06107
D'Alotto, Mrs. John A., 47 Berwyn Rd. 06107
D'Ambruoso, Mrs. Dominic C., 30 Glen Hollow 06117
de Chabert-Ostland, Mrs. Jean C., 1582 Asylum Ave. 06117
De Graff, Mrs. Arthur C., Jr., 160 Hunter Dr. 06107
DeMaio, Mrs. John, 71 Hunter Dr. 06117
Denne, Mrs. Thomas H., 30 Outlook Ave. 06119
Denton, Mrs. Cleveland R., 23 Greenridge Lane 06107
Dion, Mrs. Asa J., 60 Webster Hill Blvd. 06107
Dobrow, Mrs. Robert, 148 Pioneer Dr. 06117
Donnelly, Mrs. John, 14 Ledyard Rd. 06117
Dowling, Mrs. Kevin V., 36 Westmont 06117
Dunsmore, Mrs. Rembrandt H., 101 Waterside Lane 06107
Dushane, Mrs. Joseph E., 6 Highgate Lane 06107

Earle, Mrs. Lyon H., Jr., 16 Sunset Ter. 06107
Ehrlich, Mrs. Eugene L., 54 Lovelace Dr. 06117
Ellis, Mrs. William A., 79 Stoner Dr. 06107
Ergin, Mrs. Muceddit T., 97 Cliffmore Rd. 06107

Fairlee, Mrs. Chester, 142 Steele Rd. 06107
Feldman, Mrs. Paul, 40 Colony Rd. 06117
Fenney, Mrs. Philip W., 95 Meadow Lane 06107
Fierberg, Mrs. A. Arthur, 53 Brightview Dr. 06117
Fleisch, Mrs. Milton C., 49 Sulgrave Rd. 06107
Flescher, Mrs. Robert, 40 Berwyn Rd. 06107
Fortier, Mrs. Norman L., 70 Sheep Hill Dr. 06117
Foster, Mrs. Kendall, 41 Westminster Dr. 06107
Fox, Mrs. George F., 8 Hooker Dr. 06107
Frank, Mrs. Ludwig M., 21 Walbridge Rd. 06119

Geary, Mrs. Frederick L., 23 Sunset Ter. 06107
Gfeller, Mrs. Robert J., 16 Berwyn Rd. 06107
Giardi, Mrs. Leo P., 94 Richmond Lane 06117
Godar, Mrs. Thomas J., 72 Blue Ridge Lane 06117
Gold, Mrs. Bertram, 73 Vardon Rd. 06117
Goldberg, Mrs. Morton H., 33 Cumberland Rd. 06119
Goldenberg, Mrs. Philip T., 95 Brewster Rd. 06117
Golston, Mrs. Harry, 9 Gallaudet Dr. 06107
Gordon, Mrs. Yale, 65 Griswold Dr. 06119
Gorman, Mrs. David, 199 South Main 06107
Gould, Mrs. M. Martin, 15 Ridgewood Rd. 06107
Guillette, Mrs. William 7 Winterset La. 06117
Grace, Mrs. Thomas W., 25 Paxton Rd. 06107
Graffagnino, Mrs. Paul N., 66 Uplands Dr. 06107
Grayson, Mrs. Donald R., 62 Westwood Rd. 06117
Grody, Mrs. Marvin H., 110 High Wood Rd. 06117
Gross, Mrs. Elliot, 58 Avondale 06117
Gross, Mrs. Norman D., 368 Fern 06119

Haines, Mrs. Robert W., 360 Westmont 06117
Haksteen, Mrs. John J., 41 Middlebrook Rd. 06119
Hall, Mrs. Francis, 48 Stoner Dr. 06107
Halligan, Mrs. Thomas J., 104 Spring La. 06107
Hamilton, Mrs. George, 43 Sulgrave 06107
Hannan, Mrs. William S., 4 Squirrel Hill Rd. 06107
Haugh, Mrs. John D., 50 Mohawk Dr. 06117
Henken, Mrs. E. Marvin, 57 Pilgrim Rd. 06117
Hickox, Mrs. Curtiss B., 30 Rosedale Rd. 06107
Himelstein, Mrs. Monroe, 10 Squirrel Hill Rd. 06107
Houlihan, Mrs. John J., 101 Montclair Dr. 06107
Hull, Mrs. Crawford, 58 Walton Dr. 06107
Hulme, Mrs. Stephen A., 7 Soby Dr. 06107

Irving, Mrs. J. Grant, 180 Wood Pond Rd. 06107

Jeresaty, Mrs. Robert M., 36 Lakeview Dr. 06117
Johnson, Mrs. Donald W., 10 Selden Hill Dr. 06107

Kaplan, Mrs. Bernard J., 63 High Wood Rd. 06117
Kardys, Mrs. John A., 49 Pilgrim Rd. 06117
Kearney, Mrs. Maurice, 21 Cedar Ledge Rd. 06107
Keefe, Mrs. Arthur D., 122 Richmond Lane 06117
Keefe, Mrs. William, 17 Walbridge Rd.
Kemler, Mrs. R. Leonard, 65 Norwood Rd. 06117
Kingston, Mrs. Paul J., Barbourtown Rd. R.F.D. 1
Collinsvile 06022
Klein, Mrs. Joseph, 779 Prospect Ave., Apt. 4 06105
Krall, Mrs. Irving H., 50 Pilgrim Rd. 06117
Krenicky, Mrs. Peter, 30 Borough Dr. 06117
Krieger, Mrs. James L., 23 Glen Hollow 06117
Kugelman, Mrs. Thomas P., 19 Sunset Ter. 06107

Laakso, Mrs. William B., 48 Woodbridge Circle 06107
Lahey, Mrs. William J., 34 Montclair Dr. 06107
Lenehan, Mrs. J. Richard, 49 Rosedale Rd. 06107
Levin, Mrs. Albert E., 7 Brookside Blvd. 06107
Levy, Mrs. Benjamin, 21 Vardon Rd. 06117
Lippman, Mrs. Leonard, 133 Kirkwood Rd. 06117
Lischner, Mrs. Moses D., 3 Lawler Rd. 06117
Liss, Mrs. Joseph, 130 Richmond La. 06117
Low, Mrs. Henry, 1 Mountain Farms Rd. 06107
Lublin, Mrs. Raymond D., 19 Fulton Pl. 06107

Malinconico, Mrs. Lawrence L., 200 Westmont 06117
Mancoll, Mrs. Morris M., 285 North Quaker Lane 06119
Mancoll, Mrs. William, 30 Woodland 06105
Mandell, Mrs. Julian, 65 Sunrise Dr.
Mantel, Mrs. Fred, 68 Bainton Rd. 06117
Marino, Mrs. Frank S., 126 Pioneer Dr. 06117
Markley, Mrs. D. Norman, 777 Prospect Ave. 06107
Martin, Mrs. Stevens, 180 Fern St. 06119
McCawley, Mrs. Austin 87 Pilgrim Rd. 06117
McCloskey, Mrs. Edwin M., 42 Sheep Hill Dr. 06117
McCooey, Mrs. John H., 527 Mountain Rd. 06117
McCormick, Mrs. James M., 110 Mountain Terrace Rd.
06107
McGowan, Mrs. George E., 154 Clifton Ave. 06107
Menzer, Mrs. Alexander, 87 High Ridge Rd. 06117
Meridy, Mrs. Howard, 115 Mohegan Dr. 06117
Miller, Mrs. Bennett, 46 Whetten Rd. 06117
Mittleman, Mrs. Michael, 1075 N. Main St. 06117
Molloy, Mrs. Robert J., 29 Fulton Pl. 06107
Morhardt, Mrs. Charles, 47 Midlands Dr. 06107
Moskowitz, Mrs. Harold, 14 Arlen Way 06117
Murphy, Mrs. John D., 55 Berwyn Rd. 06107
Myerson, Mrs. Manny, 22 Palmer Dr. 06117

Nino, Mrs. Alfredo, 1 East Normandy Dr.
Nolan, Mrs. John O'L., 1 Orchard Lane 06117

O'Brien, Mrs. Frederick J., 75 Bainbridge Rd. 06119
O'Connell, Mrs. John D., 42 Fulton Pl. 06107
O'Hurley, Mrs. John, 71 Westmont 06117
O'Keefe, Mrs. David F., 93 Newport Ave. 06107
Opinsky, Mrs. Morton, 47 Mountain Farms Rd. 06117

Perkins, Mrs. Joseph A., 16 Webster Hill Blvd. 06107
Perovic, Mrs. Miles N., 2 Great Meadow Ia.
Perovitch, Mrs. Milos, 5 Bishop Rd. 06119
Piacente, Mrs. Salvatore S., 107 Brookside Dr. 06107
Pitegoff, Mrs. Gerald I., 73 Norwood Rd. 06117
Prestley, Mrs. William F., 519 Mountain Rd. 06117
Pyrtek, Mrs. L. J., 145 Walbridge Rd. 06119

Radding, Mrs. Philip, 89 Lyman Rd. 06117
Riddick, Mrs., 142 Whiting La. 06119
Ridlon, Mrs. Herrick C., 14 Glendale Rd. 06107
Ritve, Mrs. Arnold, 15 Rushleigh Rd. 06117
Robertson, Mrs. Russell, 53 Westwood Rd. 06117
Robinson, David, 69 High Ridge Rd. 06117
Rogers, Mrs. Henry, 20 Brenway Dr. 06117
Rosenbaum, Mrs. George J., 16 Vardon Rd. 06117
Rosenberg, Mrs. Jack E., 114 Kirkwood Rd. 06117
Rosenberg, Mrs. Marvin, 65 Brewster Rd. 06117
Rosenthal, Mrs. Ernest, 17 Pine Rd. 06119
Rosenthal, Mrs. Irving I., 16 Northcliff Dr. 06117
Rossi, Mrs. Michael A., 136 Orchard Rd. 06117
Rotatori, Mrs. Eugene, 60 Berwyn Rd. 06107
Rothstein, Mrs. Isadore, 90 Haynes Rd. 06117
Roussis, Mrs. Konstantinos, 8 Pleasant Hill Dr.

Ruderman, Mrs. Mark, 54 West Normandy Dr. 06107
Ryan, Mrs. Michael, 7 Knollwood Dr. 06117

Sachs, Mrs. Julius J., 22 Harvest Lane 06117
Sadowski, Mrs. Joseph S., 150 Beacon Hill Dr. 06117
Satloff, Mrs. David M., 22 Forest Hills Dr. 06117
Sayers, Mrs. John J., 2045 Boulevard 06107
Schulyer, Mrs. Samuel, 304 Steele Rd. 06117
Secor, Mrs. Ralph, 446 South Quaker La. 06110
Seide, Mrs. Morris J., 31 Cumberland Rd. 06119
Seigle, Mrs. Stewart P., 28 Northfield Rd. 06107
Selcow, Mrs. Jay E., 20 Glenwood Rd. 06107
Sennett, Mrs. Edward J., 29 Scarsdale Rd. 06107
Shafer, Mrs. Myron E., 14 Fulton Pl. 06107
Shapiro, Mrs. Reuben, 107 Ferncliff Dr. 06117
Sheehan, Mrs. George D., 91 Four Mile Rd. 06107
Shelton, Mrs. Philip A., 70 Norwood Rd. 06117
Shoukimas, Mrs. John, 26 Pheasant Hill Dr. 06107
Sicklick, Mrs. Elliot, 33 High Wood Rd. 06117
Smith, Mrs. Jay Donald, 11 West Ridge Dr. 06117
Smith, Mrs. Leonard, 35 Walbridge Rd. 06119
Soares, Mrs. Manuel J., 98 Sunny Reach Dr. 06117
Spekter, Mrs. Louis, 87 Mohawk Dr.
Spillane, Mrs. Richard J., 14 Northfield Rd. 06107
Sponzo, Mrs. James J., 81 Hunter Dr. 06107
Stack, Mrs. William J., 69 Meadow Lane 06107
Storrs, Mrs. Ralph W., 64 Orchard Rd. 06117
Sullivan, Mrs. Paul R., 8 Pilgrim Rd. 06117

Teahan, Mrs. John W., 7 Hillsboro Dr. 06107
Tennant, Mrs. Robert, 30 Ten Acre Lane 06107
Thaw, Mrs. B. D., 15 Brookside Place 06107
Thomas, Mrs. John B., 14 Oxford Dr. 06107
Thompson, Mrs. Hartwell G., 184 Mountain Rd. 06107
Tripp, Mrs. William H., 120 Cliffmore Rd. 06107
Trowbridge, Mrs. Philip E., 14 Dodge Dr. 06107
Tucker, Mrs. Charles A., 7 Wintergreen Lane 06117
Tucker, Mrs. Jolyon S., 89 Brookside Dr. 06107
Turco, Mrs. Vincent J., 52 Sheep Hill Dr. 06117
Tyrell, Mrs. David C., 2 Mt. Brook Rd. 06117

Walker, Mrs. James E., 24 Sunset Farm 06107
Walton, Mrs. Loftus, 64 Brenway Dr. 06117
Wardner, Mrs. LeRoy H., 64 High Farms Rd. 06107
Welch, Mrs. Edmund T., Jr., 5 Manor Lane 06107
Whitcomb, Mrs. Benjamin B., 38 High Farms Rd. 06107
White, Mrs. Edward, 41 Riggs Ave. 06107
White, Mrs. Kenneth H., 47 Westminster Dr. 06107
Wood, Mrs. Frank O., 28 Gloucester Lane 06107
Woodruff, Mrs. John H., 10 Sunfield Lane 06107

Zarkin, Mrs. Oscar H., 186 North Main 06107
Zeiman, Mrs. Peter, 1890 Asylum Ave. 06107
Zimmerman, Mrs. Richard, 82 Parsons Dr.

WEST SIMSBURY 06092

LoPresti, Mrs. Daniel A., 19 Fox Den Rd.

WETHERSFIELD 06109

Agee, Mrs. Fred B., Jr., 51 Westway
Aseltine, Mrs. Deal T., Jr., 99 Robeth Lane
Beakey, Mrs. John F., 25 Clearfield Rd.
Beck, Mrs. Roger S., 305 Dale Rd. 06109
Boelhouwer, Mrs. Cornelius, 359 Pine Lane
Butterfield, Mrs. Walter L., 26 Saxon Rd.
Casale, Mrs. Albert, 57 Rand La
Callan, Mrs. John, 425 Coppermill Rd.
Cavalieri, Mrs. Rinaldo, 454 Highland
Curtiss, Mrs. Burr, 98 Highcrest Rd.
DePasquale, Mrs. John A., 732 Prospect
Gallivan, Mrs. John N. 951 Ridge Rd.
Giuliano, Mrs. Sebastian, 270 Wolcott Hill Rd.
Hellijas, Mrs. Carl S., 4 River Rd.
Izard, Mrs. Mark W., 35 Broad
Johnston, Mrs. Howard J., 522 Wolcott Hill Rd.
Muangman, Mrs. Ponga Pyn, 56 Goff Brook Cr.
Murphy, Mrs. Robert D., 404 Wolcott Hill Rd.
O'Brien, Mrs. E. James, 31 Surrey Dr.
Palermino, Mrs. Donato A., 78 Baneberry Lane
Pasternak, Mrs. Herbert S., 25 Farmingdale Rd.
Reed, Mrs. John F., 381 Wolcott Hill Rd. 06109
Reinfrank, Mrs. Ralph F., 208 Highland
Ryan, Mrs. William D., 200 Ox Yoke Dr.
St. John, Mrs. Nicholas E., 375 Ridge Rd.
Steege, Mrs. Theodore W., 29 Eastern Dr.
Trench, Mrs. James M., 12 Eastern Dr.
Turner, Mrs. Wallace W., 102 Clover Crest Rd.

WINDSOR 06095

Das, Mrs. Amal. 173 Conestoga 06095
Faiaz, Mrs. E. K., 28 Jonathen Circle
Silliman, Mrs. Warren B., P. O. Box 508, 26 Prospect

OUT-OF-COUNTY MEMBERS

Connors, Mrs. Edwin R., 25 Lester Ave., Pawcatuck, Conn. 02891
Giddings, Mrs. Lane, 170 Forest Rd., Mountain Top. Pa. 18707

Litchfield County

CANAAN 06018

Sellew, Mrs. Robert, Sr., West Main
Sellew, Mrs. Robert Jr., North Elm

LITCHFIELD 06759

Samson, Mrs. Daniel, R. F. D. 2, Sweetbriar Farm

OAKVILLE 06779

Czarsty, Mrs. Joseph C., 18 Hillside Ave.

THOMASTON 06787

Wight, Mrs. Winfield K., 24 Goodwin Court

Middlesex County

CHESTER 06412

Nadel, Mrs. Martin, East Liberty

CLINTON 06413

Kerr, Mrs. Robert Commerce St.
Rindge, Mrs. Norman P., 147 East Main

COLCHESTER 06415

Turano, Mrs. Andrew, Cemetary Rd.

CROMWELL 06416

Adams, Mrs. Henry A., 384 Main
Grant, Mrs. Richard, 482 Main
Nelson, Mrs. Walter, 360 Main

DURHAM 06422

Chace, Mrs. Charles W., Cedar Dr.
Kalayjan, Mrs. David, Guilford Rd.
Mahmud, Mrs. A. Wazed, Guire Rd.
Sosa, Mrs. Juan, Carriage Dr.

EAST HAMPTON 06424

Gardner, Mrs. Norman, 22 Summit
Thomas, Mrs. John, R.R. 4

ESSEX 06426

Bardenheier, Mrs. Joseph, Hemlock Dr.
Dwyer, Mrs. Robert, Middlesex Tpke., Millstone Hill
James, Mrs. Raymond, River Rd.
Lobb, Mrs. Russell A., Long Hill Rd.

HADDAM 06438

Arena, Mrs. Anthony, Meeting House Rd.
Buckley, Mrs. Willard, Oak Ridge Dr.
Concannon, Mrs. Patrick, Timms Hill Rd.
Gorin, Mrs. Malcolm, Timms Hill Rd.
Kaufman, Mrs. Herbert, Oak Ridge Dr.
Miller, Mrs. Donald, Timms Hill Rd.

HIGGANUM 06441

Bertuch, Mrs. William, P. O. Box 382
Calhoun, Mrs. Hazen A., Main
Catrini, Mrs. Vincent, Skunk Misery Rd.
Craig, Mrs. G. Mansfield, Saybrook Rd.
Kilga, Mrs. Lawrence, Lieutenant Shubael Rd.
Korab, Mrs. John J., Main
Longo, Mrs. Edward, Skunk Misery Rd.
Macionus, Mrs. Raymond, Skunk Misery Rd. 06441
McDowell, Mrs. Arthur, Christian Hill Rd.
Rabuffo, Mrs. Jeff, Skunk Misery Rd.

MIDDLEFIELD 06455

Fiducia, Mrs. Joseph, Rosemary Ct.

MIDDLE HADDAM 06456

Campbell-Jacobs. Mrs. Richard, Main, Box 77
Clark, Mrs. Samuel, Keignley Pond Rd.

MIDDLETOWN 06457

Abad, Mrs. Alec, P. O. Box 557
Arafeh, Mrs. Mehadin K., 1 Harvey Dr.
Bernstein, Mrs. Alan, Maple Shade Rd.
Buchalter, Mrs. Daniel J., Miner
Cerritelli, Mrs. Dominick, Flynn La.
Crampton, Mrs. Clair B., 158 Mt. Vernon
Flanagan, Mrs. Joseph, 844 Long Hill Rd.
Frank, Mrs. Harry S., Stonegate Apts., South Main
Ganquli, Mrs. Prabhash, 251 Old Mill Rd.
Ghaussy, Aziz, 547 Main
Grower, Mrs. Julius, 70-B Rose Circle
Haight, Mrs. Barry, 734 Long Hill Rd.
Harvey, Mrs. Sanford, Ballfall Rd.
Harwood, Mrs. Clarence W., 135 Old Mill Rd.
Hoffman, Mrs. Daniel, Clover
Kelly, Mrs. John F., 256 Old Mill Rd.
LaBella, Mrs. Louis O., 10 Poinsettia
Lee, Mrs. John, 96 Olympus Pkwy.
Manzi, Mrs. Joseph, 195 Old Mill Rd.
McKay, Mrs. Donald, 116 Bretton Rd.
Minor, Mrs. Lloyd, 329 Coleman Rd.
Palmieri, Mrs. Mario, 200 Coleman Rd.
Pennington, Mrs. Robert B., 779 Ridge Rd.
Perlin, Mrs. Louis, Oakcliff Rd.
Prins, Mrs. Sal A., 67 Old Mill Rd.
Robbins, Mrs. Kenneth, 10 Yellow-Birch Rd.
Roccapriore, Mrs. Benjamin, Olympus Parkway
Schwartz, Mrs. Philip E., 74 Lisa Lane
Shenker, Mrs. Benjamin, 46 Pine
Sherwood, Mrs. Henry, 580 Kelsey
Soreff, Mrs. Louis, 148 Margarite Rd.
Thumim, Mrs. Mark, Maple Shade Rd.
Tracy, Mrs. F. Erwin, 202 Old Mill Rd.
Vinci, Mrs. Vincent J., Randolph Rd.
Yue, Mrs. James Kar-kee, Coleman Rd.
Zavod, Mrs. Robert, 1 Yellow Birch Rd.
Zelinka, Mrs. Miloslav, 11 Red Yellow Rd.

MOODUS 06469

Berwick, Mrs. Phillip, Plains Rd.

OLD SAYBROOK 06475

Baldwin, Mrs. David, 14 Pheasant Hill La.
Rowett, Mrs. Dale, Pheasant Hill La.
Thomas, Mrs. Eric, 393 Main St.

PORTLAND 06480

Alexander, Mrs. Stanley, 85 High
Andrus, Mrs. Wayne, Stonegate Dr.
Ceuleman, Mrs. Cyril, 4 Hall Hill Rd.
Crowther, Mrs. Daniel, Farm La.
Dooley, Mrs. John, Michelle Dr.
Eckhart, Jr., Mrs. Kenneth, 32 Michelle Dr.
Epstein, Mrs. Joseph, P. O. Box 227
Hickox, Mrs. David, Jobs Pond Rd.
Longo, Mrs. Americo, 344 Main St.
Lambe, Mrs. Thomas, Scenic Dr.
Niejadik, Mrs. Daniel, 17 Michele Dr.
Rosenbaum, Mrs. Howard, 87 William
Silberstein, Mrs. Allen, 51 Prospect
Stoane, Mrs. Leonard, 7 Clearview Dr.
Sweet, Mrs. Richard T., 15 Summer
Thomson, Mrs. A. W., 73 William
Waldman, Mrs. Arthur, Farm La.

OUT OF COUNTY

Gallo, Mrs. Sebastian, 18 Robeth La., Wethersfield 06109

New Haven County

BETHANY 06525

Cousins, Mrs. Marvin, Sperry Rd.

BRANFORD 06405

Errico, Mrs. Austin, 45 Sagamore Cove
McKeon, Mrs. James, Harbour Village 27-C
Ranieri, Mrs. Alfred, 8 Oakdale Rd.
Reisman, Mrs. John P., Hearthstone, Boston Post Rd.

CHESHIRE 06410

Allen, Mrs. Edward P., c/o Elim Park Baptist Nursing Home
Kramer, Mrs. Fred, 18-19 Currier Way 06410
Pyum, Mrs. Kyum, 99 Williamsburg Dr.
Mannes, Mrs. Peter R., 270 Nob Hill Rd.

DERBY 06418

Iannotti, Mrs. Salvatore, 10 Lombardi Dr.
Narowski, Mrs. John, 153 Sentinel Hill

EAST HAVEN 06512

Mancini, Mrs. A. D., 176 Tyler St.

GUILFORD 06437

Crawford, Mrs. William O. Jr., 264 Church
Cwik, Mrs. Ronald, 138 Oxbow La.

HAMDEN

Albis, Mrs. Michael, 14 Brenton Terrace
Berte, Mrs. John, 1129 Rolling Ridge Rd.
Camilleria, Joseph, 835 Ridge Rd. 06517
Cassin, Mrs. Carl, 947 Choate Ave. 06518
Cipriano, Mrs. Anthony, 15 Eastland Rd. 06517
Coe, Mrs. Ronald E., 1727 Whitney Ave. 06514
Culotta, Mrs. Charles, 2714 Whitney Ave. 06518
Greenwald, Mrs. Willard, 1125 Ridge Rd. 06517
Greenhouse, Mrs. H. Robert, 72 Rochford Ave.
LaFemina, Mrs. Nicholas, 60 Dawes Ave. 06517
Levenstein, Mrs. Marvin, 1797 Whitney Ave. 06517
Levis, Mrs. Albert, 22 Spring Glenn Ter.
McDonnell, Mrs. Robert, 978 Ridge Rd. 06517
Mendillo, Mrs. John J., 25 Tokeneke Dr. 06518
Olson, Mrs. Lowell, 85 River Rd. 06518
Palluotto, Mrs. William V., 50 Old Hartford Tpke.
Pickett, Mrs. Lawrence, 205 Blake Rd. 06517
Radowiecki, Mrs. M. Walter, 196 Corbin Rd. 06517
Richards, Mrs. William R., 116 Brook 06514
Stroup, Mrs. Ralph, 35 Wright La.
Wong, Mrs. Andrew, 260 Blue Trail

MADISON 06443

Sklaire, Mrs. Martin, 30 Conestoga Dr.

MERIDEN 06450

Carey, Mrs. William C., 136 Eaton Ave.
Esposito, Mrs. M. J., 379 Oregon Rd.
Flynn, Mrs. Charles, 34 Woodlawn Ter.
Fritz, Mrs. Harvey, 141 Overlook Dr.
Gottlieb, Mrs. Marvin, 199 Northfield Rd.
Guttenburg, Mrs. Irving, 21 Reynolds Dr.
Langner, Mrs. Joseph, 125 Oregon Rd.
Misuk, Mrs. Joseph, 111 Hillcrest Ter.
Moresch, Mrs. Francesco, 183 Northfield Rd.
Morrison, Mrs. Robert, 55 Harkness Dr.
Pierson, Mrs. Louis A., 130 Bradley Ave.

MIDDLEBURY 06762

Blain, Mrs. Claude, Central Rd.
Liao, Mrs. Sung J., Sky Line Dr.
Reed, Mrs. David, 202 Central Rd.
Sharian, Mrs. Kent, 81 Carriage Dr.
Ryan, Mrs. Sylvester, Breakneck Hill

MILFORD 06460

Baird, Mrs. William, 105 North
Barney, Mrs. Walter E., 35 Prospect
Parrella, Mrs. Lucy, 67 Prospect St.

NAUGATUCK 06770

Cornacchia, Mrs. Rocco, 567 Field

NEW HAVEN

Albom, Mrs. J. J., 200 Fountain 06515
Amatruda, Mrs. Frank, 8 Beechwood La.
Barker, Mrs. Creighton, 119 Armory 06511
Barse, Mrs. Richard, 266 Marvelwood Dr.
Batt, Mrs. Harold, 175 Whitter Rd. 06515
Bratu, Mrs. Marcel, 20 Wellington Rd. 06515
Bradburn, Mrs. H. B., 425 St. Ronan 06511
Chetrick, Mrs. Allen, 78 Marlin Dr. 06515
Clement, Mrs. David, 237 East Rock Rd. 06511
Climo, Mrs. Samuel, 25 Woodside Ter. 06515
Cronin, Mrs. Michael T., 67 Edgehill Rd. 06511
D'Alessio, Mrs. Charles, 523 Yale Ave. 06515
Etkind, Mrs. Meyer, 1546 Chapel St. 06511
Felig, Mrs. Phillip, 15 Edgewood Way 06515
Forman, Mrs. Joseph, 165 Stevenson Rd. 06515
Freedman, Mrs. Barnett, 111 Park 06511
Levin, Mrs. Hyman, 168 Linden 06511
Levine, Mrs. Julius, 125 Kohary Dr.
Liebowitz, Mrs. Meyer, 115 Kohary Dr. 06515
Millen, Mrs. Samuel R., 135 Cleveland Rd. 06515
O'Connor, Mrs. Denis, 239 Edwards 06511
Passarelli, Mrs. Nicholas L., 2055 Chapel 06515
Piccolo, Mrs. Pasquale, 508 Yale Ave. 06515
Pinkes, Mrs. Alexander, 183 Bishop St.
Raccuglia, Mrs. Giovanni, 109 Sherman Ave.
Schwartz, Mrs. Solomon, 1781 Boulevard 06511
Silberstein, Mrs. Morton, 25 Colony Rd.
Silverberg, Mrs. Samuel, 140 Laurel Rd. 06511
Swirsky, Mrs. Morgan Y., 280 McKinley Ave. 06515
Wolff, Mrs. Emanuel, 251 Edwards 06511
Zuckerman, Mrs. Bernard D., 25 Beaver Hill Lane 06511

NORTH HAVEN 06473

Baskin, Mrs. Arnold W., 26 Old Orchard Rd.
Davey, Mrs. Lycurgus M., 1010 Hartford Tpke.
Dolinsky, Mrs. A. H., 12 Crestview Dr.
Downing, Mrs. Lewis C., 87 Highland Park
Ferranti, Mrs. Redento, 6 Hilltop Terrace
Fezza, Mrs. Andrew, 20 Westview Rd.

Fischer, Mrs. Daniel, 22 Windsor Rd. East
Goodman, Mrs. Alan, 23 Primrose St.
Kaplan, Mrs. Harold, 42 Drazen Drive
Hart, Mrs. Robert W., 2233 Ridge Rd.
Hess, Mrs. Orvan, 29 Old Orchard Rd.
Kessler, Mrs. Frederick, 20 Dogwood Rd.
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Morgan, Mrs. Walter, 41 Tokeneke Dr.
Noto, Mrs. Philip, 17 Marion
Parisi, Mrs. Anthony, 30 Windsor Rd.
Vegliante, Mrs. Michael, 22 Primrose Rd.

ORANGE 06477

Aguiar, Mrs. Jose, 45 Williamsburg Dr.
Brodoff, Mrs. Murray, 21 Williamsburg Dr.
Dobeny, Mrs. James J., 885 Blackberry Hollow
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Landwirth, Mrs. Julius, 625 Brentwood Rd.
Lanzi, Mrs. Robert, 64 Hall
Lattanzi, Mrs. William, 834 Dentree Dr.
Lebson, Mrs. Robert, 983 Rainbow Trail
Lin, Mrs. Paul C., 609 Chestnut Ridge Rd.
Marib, Mrs. Norman, 266 Hemlock Dr.
Morrison, Mrs. John, 140 Cherry Hill Rd.
Manjoney, Mrs. Richard C., 760 Dennis Dr.
Milazzo, Mrs. Nicholas, 173 Englewood Dr.
Petrillo, Mrs. Charles, 66 Derby Ave.
Phillips, Mrs. Carlton, 682 Estelle Ct.
Rifkin, Mrs. Boris, 399 Clark Lane
Sikorski, Mrs. Jerzy, 238 Harvester Rd.
Turkalo, Mrs. J. R., 894 Orange Center Rd.
Zagraniski, Mrs. Raymond, 48 Whitney Lane

OXFORD 06483

Boissevian, Mrs. Andre, 109 Quaker Farm Rd.

SHELTON 06484

Galen, Mrs. Jack H., 93 Myrtle
Roach, Mrs. Donald, 40 Judson Circle
West, Mrs. William, 147 Huntington

STONY CREEK 06405

Zimmerman, Mrs. Marvin, 23 Prospect Hill

WALLINGFORD 06492

Fazzone, Mrs. Philip, 290 Cook Hill Rd.
Francescon, Mrs. Sergio D., 10 Spring Brook Rd.

WATERBURY

Blank, Mrs. Samuel, Southwest Rd. 06708
DePetrillo, Mrs. Bart, 619 Willow 06710
Eslami, Mrs. Mehdi, 139 Eastfield Rd. 06708
Gualtieri, Mrs. Michael, 55 Forest Ridge Rd. 06709
Lenkowski, Mrs. William, 107 West Ridge Dr. 06708
Luria, Mrs. Sidney, 124 Avalon Circle 06710
Mayo, Mrs. Elliott Russell, 129 Prospect 06702
Nezhad, Mrs. Michael F., 35 Campfield Rd. 06708
Reynolds, Mrs. Joseph, 185 Pine 06710
Rosenbaum, Mrs. Haskell, 161 Avalon Circle 06710
Santopietro, Mrs. Olindo, 241 Forest Ridge Rd. 06708
Segall, Mrs. Edward, 162 Southwind Rd. 06708
Sullivan, Mrs. Arthur, 493 Willow 06710
Tormo, Mrs. Vincent, 76 Robinwood Ave. 06708
Veiga, Mrs. A. S., 55 Eastfield Rd. 06708
Weisberg, Mrs. H. E., 50 Gaylord Dr. 06710
Whalley, Mrs. Evan J., 720 Baldwin 06706

WEST HAVEN 06516

Job, Mrs. Gil, 32 Priscilla Rd.
Milano, Mrs. N. A., 277 Elm
Milici, Mrs. John J., 354 Campbell Ave.
Mujtaba, Mrs. Quiyum, 78 Savin Ave.
Tierney, Mrs. Lawrence, 246 Elm

WOODBRIDGE 06525

Arons, Mrs. Marvin, Hunting Hill Rd.
Berneike, Mrs. Robert, Hickory Rd.
Brochin, Mrs. Malcolm, Hemlock Hollow Rd.
Cimmino, Mrs. Gerald, Dillon Rd
Davidson, Mrs. Alan, 15 Edge Hill Dr.
Delpizzo, Mrs. A., 14 Dickinson Dr.
Demir, Mrs. Peter, 11 Dogwood Circle
Dineen, Mrs. Joseph, 18 Indian Trail
Etkind, Mrs. Ewald, 1 Bright Wood Dr.
Flores, Mrs. Jose, 1057 Johnson Rd.
Gagliardi, Mrs. Joseph, Jr., Forest Glen Dr.
Goetsch, Mrs. John, Cleft Rock Lane
Goldstein, Mrs. Paul, 21 Pine Ridge Rd.
Goodrich, Mrs. Isaac, 15 Birch Dr.
Gruskay, Mrs. Frank, Pine Ridge Rd.
Hurwitz, Mrs. Robert, 14 Tulip Tree La.
Ingenito, Mrs. Gabriel, 181 Center Rd.
Katz, Mrs. Jay Inwood Rd.
Kra, Mrs. Siegfried, Pleasant Hill Rd.
Laubstein, Mrs. Melvin, Richard Sweet Dr.
Lawson, Mrs. Jack, Brierwood Dr.
Maric, Mrs. Radoslav, 77 Ford Rd.
Petrie, Mrs. Stewart J., 16 Wolf Tree Dr.
Polayes, Mrs. Irving, 49 North Racebrook Rd.
Sachs, Mrs. Frederick, 42 Indian Trail
Savin, Mrs. Ronald, Edgehill Dr.
Scarpa, Mrs. Francis J., 38 Richard Sweet Dr.
Schioppo, Mrs. Dominic B., 46 Newton Rd.
Schwartz, Mrs. A. Herbert, Indian Trail Rd.
Vestal, Mrs. Paul, Amity Rd.
Weisinger, Mrs. Philip, Blue Trail Dr.
Winer, Mrs. Paul Tumblebrook Rd.
Wirth, Mrs. Michael N., Pine Ridge Rd.

WHITNEYVILLE 06517

Harvard, Jr., Mrs. Bell Martin, 105 Spring Glen Ter.
Heiger, Mrs. Arnold, 4 Hesse Rd.

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Collins, Mrs. Joseph O., 326 Woodbury Rd., Watertown 06795
Schure, Mrs. George, 503 Rock Ridge Rd., Fairfield 06430
Sherman, Mrs. Joel, 343 Concord Dr., Watertown 06795

New London County

BALTIC 06330

Browning, Mrs. S. Pearce III, 671 Scotland Rd. R.F.D. 1

COLCHESTER 06415

Conrad, Mrs. Carl, R .F. D. 2, Palmer Rd.

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Edgar, Mrs. Edward, 9 Black Oak Dr.
Fleisher, Mrs. Paul, Green Valley Lakes
Saxe, Mrs. Louis, 3 Colonial Dr.

FRANKLIN 06360

Goldblatt, Mrs. Jeffrey, 17 So. Gate Circle

JEWETT CITY 06351

Gosselin, Mrs. Albert, R.F.D. #4

GROTON 06340

Brown, Mrs. Walter, 91 Broad
Hollister, Mrs. James M., 76 Starr Hill Rd.
Holt, Mrs. Edward, 145 Military Highway

LEBANON

Springer, Mrs. Gerald, Rt. 87 R.D. #1

LYME 06371

Cavicke, Mrs. David, Joshua Rd.
Ely, Mrs. Julian, R. F. D. 2

MYSTIC 06355

Piankeel, Mrs. John, 66 Hilltop Rd.
Pukay, Mrs. Boris, 21 East Main St.

NEW LONDON 06320

Beatman, Mrs. Bernard, 16 Niles Hill Rd.
Becker, Mrs. Joseph, 2 Henderson Rd.
Bobruff, Mrs. Jerome, 765 Pequot Ave.
Fagan, Mrs. Frederic, 19 Glenwood Ave.
Hendel, Mrs. Isadore, 336 Pequot Ave.
Irwin, Mrs. Harold H., 158 Williams
Karno, Mrs. Martin, 894 Ocean Ave.
Krinsky, Mrs. Charles M., 943 Ocean Ave.
Lena, Mrs. Hugh F., Jr., 160 Broad
Loiacono, Mrs. Richard, 61 Parkway South
Longo, Mrs. Vincent, 967 Pequot Ave.
Lubchansky, Mrs. Jacob, 24 Reyquin
Mariani, Mrs. Roland, 899 Ocean Ave.
Murray, Mrs. William J., Jr., 614 Montauk Ave.
Olsen, Mrs. Robert C., 685 Pequot Ave.
Peterson, Mrs. David, 210 Gardner Ave.
Prokesch, Mrs. Clemens, 30 Admiral Dr.
Roe, Mrs. C. Francis, 774 Ocean Ave.
Schmidt, Mrs. William, 8 Hillside Rd.
Spitz, Mrs. Hilliard, 17 Henderson Rd.
Sprecace, Mrs. George, 33 Hillside Rd.
Sulman, Mrs. Morris, 737 Pequot Ave.
Wies, Mrs. Carl, 756 Pequot Ave.

NIANTIC 06357

Dey, Mrs. Frederick, 15 Smith Ave.
Fulchiero, Mrs. Egidio, 9 Laurel Hill Drive So.
Kramm, Mrs. William A., 84 Hope
Reilly, Mrs. John, 55 Terrace
Scholz, Mrs. Dieter, 62 Ledge Rock Rd.

NORWICH 06360

Ahamad, Mrs. Sultan, 39 Tanglewood Dr.
Albamonti, Mrs. Mario J., 46 Rockwell
Archambault, Mrs. Henry, 18 Wayne
Aromin, Mrs. Salvador, Uncas on the Thames
Barrett, Mrs. Frederick, 256 Broadway Ave.
Bergendahl, Mrs. H., 17 Huntington Lane
Betten, Mrs. Michael, R.F.D. #2
Bielecki, Mrs. Casmir, 17 Harland Place
Coletti, Mrs. Larry, 34 Gulliver Circle
Costa, Mrs. Pasquale, 44 Gulliver Circle
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DeGroot, Mrs. Theodore, 18 Broad St.
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Glenney, Mrs. Christopher, 16 Huntington Lane
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Gulino, Mrs. Angelo, 15 Campion Ave.
Guss, Mrs. Louis, 59 Sachem Rd.
Harkins, Mrs. James A., 96 Case
Joseph, Mrs. Julien L., Scotland Rd., R.F.D. 4
Kalams, Mrs. Zanis, 74 Case
Katz, Mrs. Morris E., 24 Broad
Kelleher, Mrs. James, 403 Washington
Kerrigan, Mrs. Robert, Mediterranean Lane
Kropp, Mrs. Peter, 4 Dellwood Rd.
Lee, Mrs. Woong Bum, 80 Sherwood La.
Lesnik, Mrs. Thomas, 27 Scotland Rd.
Mahoney, Mrs. Joseph, 74 Ox Hill Rd.
Mandell, Mrs. Harvey, Indian Spring La.
Martin, Mrs. John, 28 Montgomery Lane
Martin, Mrs. Morgan, Box 508, Norwich State Hospital
Masterson, Mrs. Thomas, 23 East Town
McKeon, Mrs. William, 18 Sherwood Lane
Morrison, Mrs. John, 11 Lincoln Ave.
Oppenheimer, Mrs. Kurt, 8 Dupont Lane
O'Toole, Mrs. Peadar, Norwich State Hospital, Box 508
Parthenis, Mrs. Alex, Box 508, Norwich Hospital
Pastel, Mrs. Neil, Pine Broik Village, Sheraton Lane
Phillips, Mrs. Nicholas T., 14 Montgomery Lane
Richeimer, Mrs. William, 32 Lyman Hill Rd.
Rosenberg, Mrs. Peter J., 420 Washington
Sawyer, Mrs. David, 236 Washington
Schwarz, Mrs. H. Peter, 172 Washington
Sears, Mrs. Lewis, 15 Julian
Seulco, Mrs. Mario, 195 Washington
Taylor, Mrs. K. Stephens, 34 Rockwell St.
Thompson, Mrs. Clarence, 324 Canterbury Tpke.
Torres, Mrs. Clemenico, 172 Harland Rd.
Tramontozzi, Mrs. Anthony, R. F. D. 4
Watson, Mrs. James E., 53E Town

NORWICHTOWN 06360

Wilson, Mrs. Clifford, 19 E. Town

OLD LYME 06371

Ely, Mrs. Julian, R.F.D. #2
Hostnik, Mrs. William J., Lyme
Klimek, Mrs. Robert, Littlefield La.

OLD MYSTIC 06372

Jones, Mrs. William, North Stonington Rd., Box 164

QUAKER HILL 06375

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SALEM 06415

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STONINGTON 06378

Haines, Mrs. Henry, R.F.D. #2 06376

TAFTVILLE 06380

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UNCASVILLE 06382

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Behringer, Mrs. Frederick, 14 Susan Ter.
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Dyer, Mrs. Charles F., 5 Showandasee Ave.
Kim, Mrs. Albert, 11 Trumbull Rd.
Marchand, Mrs. Gilles, 3 Jonathan Law Ct.
Marx, Mrs. Frank, 58 Gallup Lane
McCue, Mrs. Martin P., 473 Boston Post Rd.
Robinson, Mrs. Charles, 12 Baldwin Dr.
Sprafke, Mrs. Donald, Rogers Hill Rd.

Windham County

ABINGTON 06230

Valentine, Mrs. Bruce Roberts

BROOKLYN 06234

O'Brien, Mrs. Gerald J., P.O. Box 238

CANTERBURY 06331

Galasyn, Mrs. Valantine, Buck Hill Rd.

COLUMBIA 06237

Basden, Mrs. Edwin H., Route 87
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COVENTRY 06238

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Weigel, Mrs. Stanley Joseph, 6 Peckham La.

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Chung, Mrs. Evik, R.F.D. No. 1, Box 460
Dufort, Mrs. Robert, R. F. D. 1, Box 724
Raheb, Mrs. Edmond, R.F.D. 1, Box 702

EAST WOODSTOCK 06244

Klare, Mrs. Rudolph Emil, Route 169

HAMPTON 06249

Woodworth, Mrs. John Albert, No. Bigelow Rd.

JEWETT CITY 06351

Kennedy, Mrs. George L., 5 Maple

MANSFIELD CENTER 06250

Bopp, Mrs. Raymond P., Wormwood Hill Rd.
Lindquist, Mrs. Carl, 494 Wormwood Rd.
Prescott, Mrs. Blake D., R. R. 1 Box 131

MOOSUP 06354

Barry, Mrs. E. Arthur, 45 Prospect

NORTH GROSVENORDALE 06255

Kuk, Mrs. Dennis, Thompson Medical Center

POMFRET 06258

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Eaton, Mrs. Harry E.

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Dinolt, Mrs. Robert, 119 Prospect
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Park, Mrs. Sowhey, R . F. D. 2, Putnam Heights
Shepard, Mrs. William Mac, R.F.D. No. 2

SCOTLAND 06264

Glugover, Mrs. Donald, P. O. Box 68

SOUTH WOODSTOCK 06267

Middleton, Mrs. Charles J., Ellen La.

STORRS 06268

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Gilman, Mrs. Ralph L. 3 Willowbrook Rd.
Griswold, Mrs. Douglas, Baxter Rd.
Haney, Mrs. John F. B., 667 Chaffeeville Rd.
Melton, Mrs. Alan, 64 Willowbrook Rd.
Monkowitz, Mrs. Robert I., 9 Thomas Dr.
Rosenberg, Mrs. Murray Z., Birchwood Heights

THOMPSON 06277

Meyer, Mrs. John L., Box 312
Waldron, Mrs. Sherman, R. F. D. 1, Box 2

WILLIMANTIC 06226

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Flynn, Mrs. J. Dennis, R.F.D. No. 3 Partridge Rd.
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Lee, Mrs. Sangwun, Pigeon Rd.
Major, Mrs. James W., R.F.D. No. 2, Box 203
Roch, Mrs. George E., R.F.D. No. 3, Box 417
Rothblatt, Mrs. Reuben, Pigeon Rd.
Sandler, Mrs. Melvin, 282 Church
Sikand, Mrs. Sage D., R.F.D. 3, Partridge Ridge
Smith, Mrs. Fred Morse, 103 Windham Rd.

WINDHAM 06280

Anderson, Mrs. James T., Windham Center
Arnold, Mrs. Morton, Windham Center
Gillcash, Mrs. Robert, S., Box 42 Windham Center
Hale, Mrs. Stanton D., Mullen Hill Rd.
Sandler, Mrs. Gerald F., Box 115, Windham Center
Whalen, Mrs. William, Windham Center

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Diaz, Mrs. Arturo, Route 1, Box 113

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